A black and white photograph of a person riding a bicycle across a zebra crossing. The person is wearing a dark jacket and a light-colored conical hat. The bicycle has a large, woven basket on the front. The background is blurred, showing the white stripes of the zebra crossing and the road surface. The text 'BETWEEN THE LINES' is overlaid in large, white, bold, sans-serif capital letters on the right side of the image.

# BETWEEN THE LINES

**INTERPRETING TODAY'S  
EMERGING MARKETS**

# SPEAKING THE LANGUAGE OF TODAY'S EMERGING MARKETS

INTERPRETING OPPORTUNITY

Institutional investors are searching for return, and they're looking for it in emerging markets. For good reason: The developing world offers stronger economic growth prospects than developed countries do, along with improving fiscal conditions, favorable demographics and increasing liquidity. At SSgA, we partner with our clients to incorporate emerging markets assets into portfolios designed to meet their specific needs.

We believe that successfully investing in emerging markets requires an understanding of the risks and sources of return across asset classes. The insights gained from such analysis enable clients to understand the trade-offs related to each investment option, and to decide which risks to accept in pursuit of their objectives.

At SSgA, we have investment management experience and resources in each emerging market and asset class. We manage money in almost every investable market in the world, and we bring a wide range of voices and perspectives into the conversation around emerging markets investing.

Our focus is not on one asset class or strategy—it's on helping our clients better understand emerging markets and on working with them to find the

right solution for their needs. We have compiled the following materials to give you a sense of our expertise and perspectives. We look forward to speaking with you about how we can help you meet your return objectives with emerging markets.



**KRISTI MITCHEM**  
*Head of the Americas Institutional Client Group*



## Table of Contents

A Macro Shift to Emerging Markets Equities, Fixed Income and Currencies	3
Adding Value in Emerging Markets Equities	11
China's Leadership Transition and its Implications for Investors	15
How Investors Can Benefit from Size and Liquidity Risk Premia in Emerging Markets Equities	20

**MICHAEL HO, PH.D.**

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Active Emerging Market Equities  
and Global Macro*



## A Macro Shift to Emerging Markets Equities, Fixed Income and Currencies

**In the wake of the post-Lehman Great Recession, it has become increasingly clear that slow economic growth in advanced nations may continue for years to come. Thus, in the current environment, investors are focused on the process of private balance sheet deleveraging offset by significant leveraging of public balance sheets. This practice has large implications for both market risk appetite and global economic growth.**

Given better fiscal and balance sheet health in most emerging markets and a potential demographic dividend (when a country's fertility rate falls and the proportion of its working population grows), many investors expect emerging markets assets to outperform the developed markets in the next decade. So not surprisingly, we have seen an increase in investor interest in the equities, debt and currency asset classes of emerging countries in the last few years.

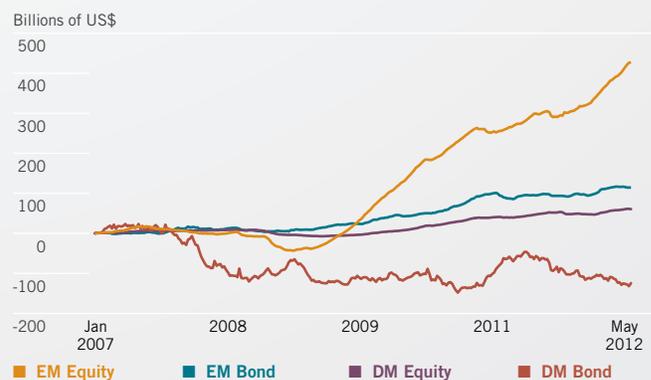
Figure 1 shows that, despite positive equity returns since 2000, the assets have been flowing away from developed equities into developed fixed income, emerging equities and emerging debt.

We believe that emerging markets asset classes are not only individually attractive in comparison with their developed counterparts, but also wholly essential as a complement to developed markets in an investment portfolio.

### A Historical Macro Perspective: The Population Time Bomb

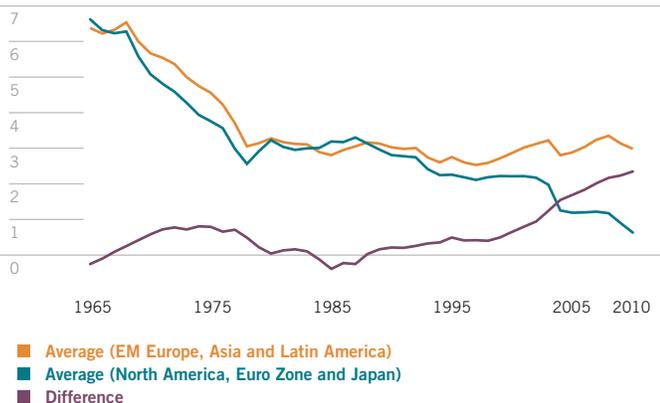
To get a better sense of the future return potential of emerging markets, it is important to go back to the 1980s and 1990s, before the acronym BRIC (Brazil, Russia, India and China) was coined. During this period, countries such as India and Russia were hard pressed to generate sustained rates of high economic growth, and many emerging markets in Latin America were suffering significant hyperinflation and currency devaluation. In the early 1990s, Western press focused on the problem of a population time bomb in China and India and debated the effectiveness of such population-control measures as the one-child policy in China and the male sterilization campaigns in India. Back then emerging markets assets performed poorly and there was no notion of the demographic dividend so popular today.

**Figure 1: Cumulative Fund Flow of Registered Funds Into Various Asset Classes**



Source: Emerging Portfolio Fund Research, Inc. (EPFR), SSgA

**Figure 2: Moving 10-year Average of Real GDP Growth of Emerging Markets Regions Versus Developed Market Regions**



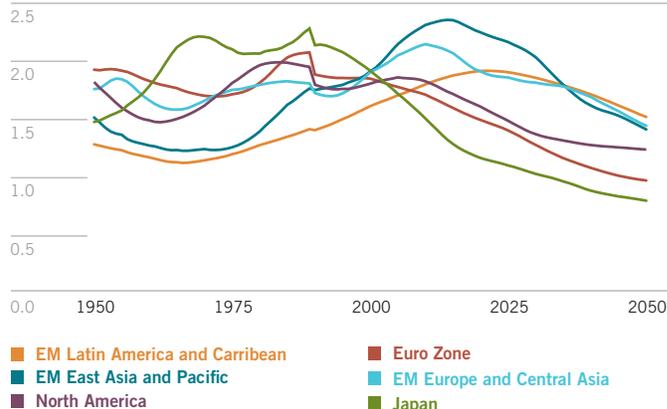
Source: The World Bank, SSgA  
The World Bank has different constituent countries classified as emerging markets. They do not correspond completely with the MSCI EM countries.

### A Startling Turnaround

Around 2001, however, emerging markets equities turned around in a startling fashion. From January 2001 to May 2012, annualized returns of the MSCI EM Equities Index averaged more than 11% compared to only around 3% from 1990 to 2001. Fundamental measures of performance were also significant—return on equity for companies in the MSCI EM Index went from 0.9% per annum from 1995–2001 to 9.2% in the 2001 to 2012 period. Real GDP growth of the less advanced nations also began to significantly outpace that of the advanced nations starting around 2001.<sup>1</sup> Figure 2 shows the difference in average real GDP growth of emerging markets versus developing markets since 1965.<sup>2</sup>

In the mid to late 2000s, investors began to accept the notion that the changing age structure of less advanced nations, or their so-called demographic dividend, can be a major driver of economic growth. If a country's birth rate is falling and thus changing its age distribution, then its dependency ratio—that is, the ratio of the dependent population, the young and the old, to the working age group—should be improving. The notion is that having more workers versus dependents (e.g. the inverse of dependency ratio) can lead to better economic growth and, hence, favorable equity market returns. This idea has its roots in the theory that when the mortality age of a country begins to increase, fertility rates tend to fall since fewer children are required to survive to adulthood. The resulting decline in the dependency ratio should lead to increasing capital accumulation and higher labor productivity for that nation.

**Figure 3: Inverse Dependency Ratio (Working Population Age 15 to 64 / Total Population)**

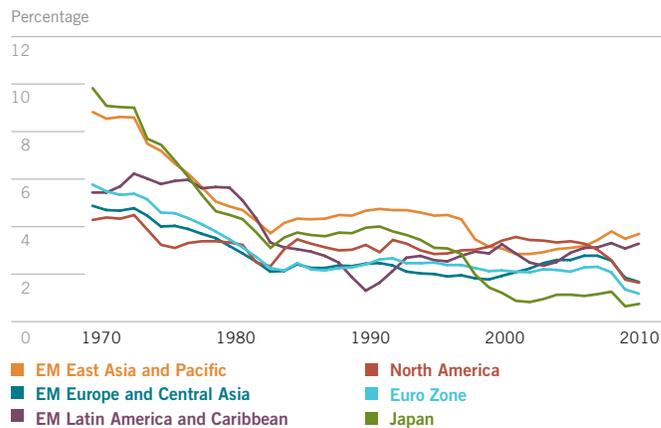


Source: United Nations, Dept. of Economic and Social Affairs, SSgA  
The World Bank has different constituent countries classified as emerging markets. They do not correspond completely with the MSCI EM countries.

This is one of the main theories behind the current thinking on economic growth and clearly delineates the diverging growth paths between aging developed countries and more youthful emerging nations. Figure 3 shows the inverse dependency ratio in various regions around the world.

However, a better dependency ratio does not automatically mean better economic growth. To drive economic growth, the adult population needs jobs, access to credit and new technology, and infrastructure to urbanize. In fact, the dependency ratio did not change much in East Asia for the decade before and after 2001, which is the point when the emerging markets took a huge upturn

**Figure 4: Real GDP Growth by Region**



Source: The World Bank

in economic growth and corporate profitability versus advanced countries (see Figure 4).

One potential factor behind this surge is that the governments of emerging markets adopted more prudent policies after the 1997 Asian Currency Crisis. Another historical landmark is that the World Trade Organization (WTO) admitted China in November 2001, which marked the beginning of a profound shift of labor arbitrage from the world to China and contributed significantly to the increase in emerging markets growth.

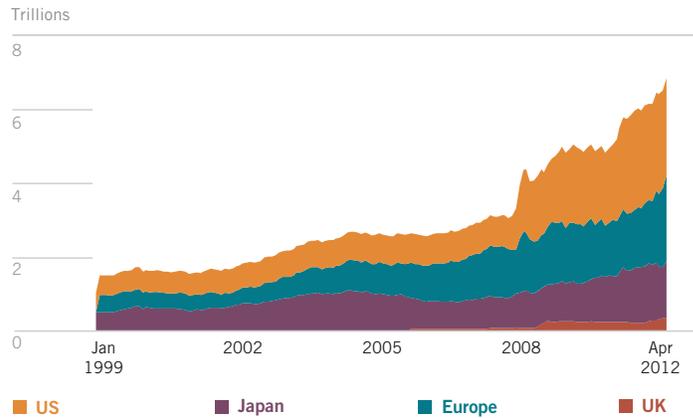
One important determinant that is often overlooked is the abundant liquidity made available by Central banks after the Internet bubble burst. In 2001, the US Federal Reserve and other central banks reduced short-term real rates to induce consumption and investment. Lack of pricing power of goods sold and advances in technology drove businesses in developed countries to outsource both production and services to emerging markets. This transition helped improve corporate profit margins and earnings. The off-shoring process in effect channeled cheap credit from Developed Markets' central banks to Emerging Markets' economies, as many exchange rates were either fixed or semifixed with a managed float.

China was able to take advantage of this foreign investment and quickly industrialize and urbanize. As China's rural farmers became coastal factory workers, Chinese productivity gains outpaced the developed world, which then reinforced this trend. Chinese infrastructure was built to feed its export engine, simultaneously driving a rapid rise in commodities demand and prices. The upshot induced rapid economic growth in nations rich in commodities, such as Russia, Brazil, South Africa, and Australia. China also served as a regional engine of growth as it sourced manufactured components from other parts of Asia.

### Macro Environment Today and Beyond

Fast-forward to the post-Lehman world today—we continue to experience slow and uneven growth in advanced nations caused by private balance sheet deleveraging in US and Europe. Compared to just before Lehman's collapse in August 2008, central banks have not only pushed real interest rates below zero,<sup>3</sup> but also expanded their balance sheets by trillions of US dollars via quantitative easing to shore up banks. Figure 5 shows the monetary base growth of the US, UK, Japan and the euro zone. In other words, Western central banks are once again priming the cheap credit pump.

**Figure 5: Cumulative Total of Monetary Base (in Trillions of US Dollars) for US, Europe, Japan and UK**

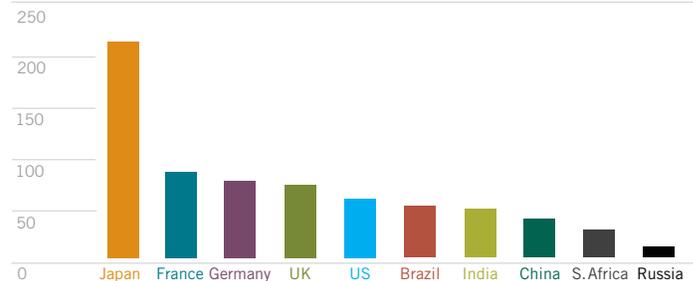


Source: Bloomberg

Normally, this cheap credit should bolster growth in emerging markets, particularly because those countries exhibit healthy fundamentals. For example, measures such as government debt-to-GDP ratios, budget deficits and current accounts seem significantly better than advanced countries. This advantage is shown in Figure 6 and 7, which plot the debt-to-GDP and budget deficits of governments in large emerging markets and developed markets.

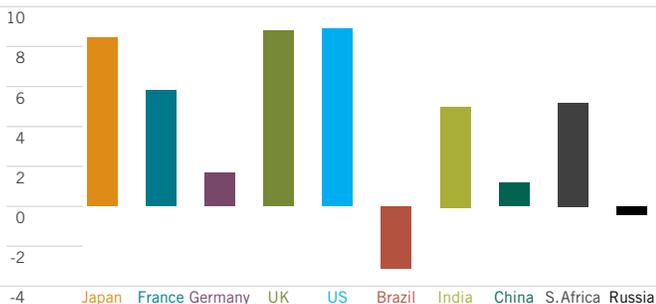
However, the situation is different this time around. Despite higher growth rates and relative fiscal safety today, emerging markets asset classes remain highly linked to a risk-on environment.

**Figure 6: Emerging Markets Versus Developed Markets Government Debt-to-GDP Ratio**



Source: CIA Fact Book 2011 Estimates  
Negative values indicate a budget surplus.

**Figure 7: Emerging Markets Versus Developed Markets Government Budget Deficit as Percentage of GDP**



Source: CIA Fact Book 2011 Estimates  
Negative values indicate a budget surplus.

So how do we see the future for emerging markets? Ruling out a depression scenario, which can potentially happen if the euro breaks up badly, or if the US sequester in 2013 is not dealt with in time, the conditions are quite favorable for emerging markets equities, fixed income and currencies in comparison with their developed equivalents. The reason is that the provision of credit and liquidity in developed nations should flow to an area of higher expected real yield and returns if risk aversion is tempered. To get a better sense for this, let's take a closer look at emerging equities, fixed income and currencies separately.

### Emerging Markets Equities: An Attractive Asset Class

We can get a good understanding of equities by breaking down their total returns into the following components: expansion in price-to-book valuation multiples, payout of dividends, retained earnings and appreciation of exchange rates. We know that the total return in US dollars = price return + dividend payout + exchange rate appreciation. We also know that price return in local currency = change in P/B valuation + change to book value (or retained earnings). So, we can categorize these return components as: 1) changes in valuation, 2) earnings, 3) dividend payout and 4) global relative-repricing.

In Figure 8, we plot the cumulative return from these sources.

Historically, emerging markets equities earned a meager return on equity from the mid-90s<sup>4</sup> until 2001. For emerging markets, returns due to company ROE (e.g. retained earnings and dividend payout) were approximately 4.3% per annum during this period versus 7.4% per annum for developed markets equities. However, from the dot-com bust in 2001 until today, the ROE inclusive of dividends accelerated to an average of 12% per annum for

**Figure 8: Cumulative Return of \$1 in MSCI EM and World Index Attributed to Various Sources of Returns**



Source: MSCI, SSgA  
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.

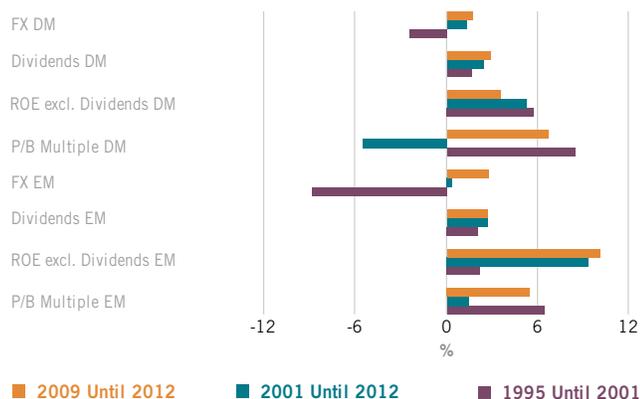
emerging markets firms while developed markets firms stayed roughly at the same ROE of about 7.7% per annum. This turnaround in ROE for emerging markets firms did not come from differential earnings reinvestment and dividend policies. In fact, the dividend returns post-2001 accounts for about 2.7% for emerging markets firms and 2.4% for developed markets firms.

Given the extreme turnaround, the liquidity injection by Western central banks just after the dot-com crash likely accelerated the growth of corporate profitability in emerging markets. Since 2009, emerging markets companies in the MSCI Index gained almost 1% ROE at 12.7% per annum while developed markets companies realized a 1% decline in ROE at 6.5% per annum. It is not a surprise that much of the recent developed markets ROE decline has come from Japan and Europe.

Let's look at the returns due to changing valuation levels. Return stemming from changes to P/B was 6.4% per annum for emerging markets and 8.5% per annum for developed markets from the mid-90s to 2001. From January 2001 to April 2012, emerging markets valuation barely contributed 1.4% per annum, while developed markets contributed -5.5% per annum. The very negative valuation return for MSCI World was caused primarily by the collapse of North American and European equities from the dot-com bubble P/B levels of 3.4 to 4.4 in 2001 to 1.3 to 2 today.

In contrast, the highest price that multiple emerging markets equities achieved during the dot-com bubble was about two times

**Figure 9: Sources of Returns of the MSCI EM and World Index in Various Historical Sub-Periods**



Source: MSCI, SSgA  
 Past performance is not a guarantee of future results.  
 Index returns are unmanaged and do not reflect the deduction of any fees or expenses.  
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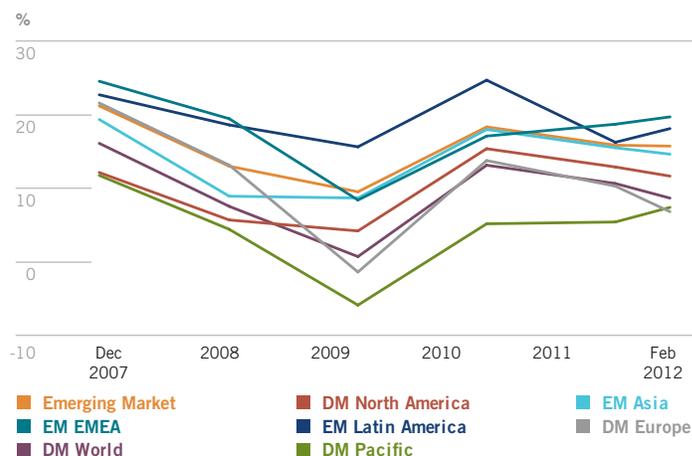
book value, because investors were wary of emerging markets stocks given the painful memories of the 1997 Asian currency crisis. In the current environment, emerging markets stocks are priced at a P/B ratio of 1.54, whereas MSCI World is priced at 1.6 P/B. emerging markets equity valuation is essentially on par with Developed Market equities, even though emerging markets ROE has been roughly two times higher in the last few years.

We believe that today's opportunity in emerging markets versus developed markets equities does not lie in their differential valuation levels, but rather in their much higher return on equity. The primary investment risk is, of course, that the recent years' 12.7% ROE for emerging markets firms reverts to either the 6.5% for developed markets firms or to the 4.3% level seen for emerging markets during the mid-1990s to 2001. In Figure 10, we plot the trailing one-year ROE for both emerging markets and developed markets and their regional constituents. Figure 10 shows that ROE did decline for all countries, but emerging markets ROE have recovered since year-end 2008, while Europe is dragging down the ROE for developed markets.

In our view, this risk is small. One reason is that emerging markets equities tend to be dominated by large firms that are either financial or commodity producers. These firms can extract higher profits due to either their dominant local market position or their natural resource endowment.

Another important reason is that emerging economies are not leveraged to the same extent as advanced economies. Much like

**Figure 10: Trailing One-year Return on Equity for MSCI Indices in Emerging Markets and Developed Markets and Their Constituent Regions**



Source: MSCI, SSgA  
 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.

the dynamic between the Bank of Japan and the rest of the world from the 1990s to now, slow growth in advanced countries for the next few years could channel liquidity created by the advanced nations' central banks to emerging markets. In fact, we have seen a much larger decline in ROE for developed markets firms after 2009 than for emerging markets firms, which seems to be a repeat of 2001 to 2003, when stimulative actions by the Fed and others at that time benefited emerging markets firms more than developed markets firms.

### Emerging Markets Sovereign Debt: Fundamentals More Sound Than Its Developed Market Cousins

With central banks setting deposit rates below short-term inflation expectations and engaging in quantitative easing to pull down the long-term bond yields, it is easy to see why many investors are worried about bonds as an asset class. In fact, the sovereign debt yields of many countries do not offset their rate of inflation. For example, 10-year US Treasuries are yielding below 1.7% as of this writing, which is significantly lower than the 10-year historical Consumer Price Index (CPI) inflation of 3.5%. In fact, we can conduct a more in-depth analysis to see the relative value of sovereign debt globally. Because of the differences in maturities and varying Brady-bond features of many Emerging Markets sovereign debt, we combine a 5-year sovereign CDS and a five-year US dollars interest rate swap to construct representative five-year sovereign debt yields.<sup>5</sup>

**Figure 11: Beta and Statistical Significance of the Explanatory Variables of Sovereign Spread Based on Regression of CDS and Swap Yield on May 31, 2012**

	Debt/GDP	E(Inflation)	E(GDP Growth)	Budget Deficit	Constant
Beta	(0.0012)	.036	(0.24)	(0.02)	2.64
T-stat	(0.09)	5.82	(1.66)	(0.34)	2.76

Source: Bloomberg, CIA World Fact Book, Consensus Economics, SSgA  
 Regression R-Squared is 52%.  
 Past performance is not a guarantee of future results.

We have regressed this yield as of the end of May 2012 against the following four variables:

- The Debt/GDP ratio
- Expected 12-month forward inflation
- Expected 12-month forward real GDP growth
- The 2011 budget deficit

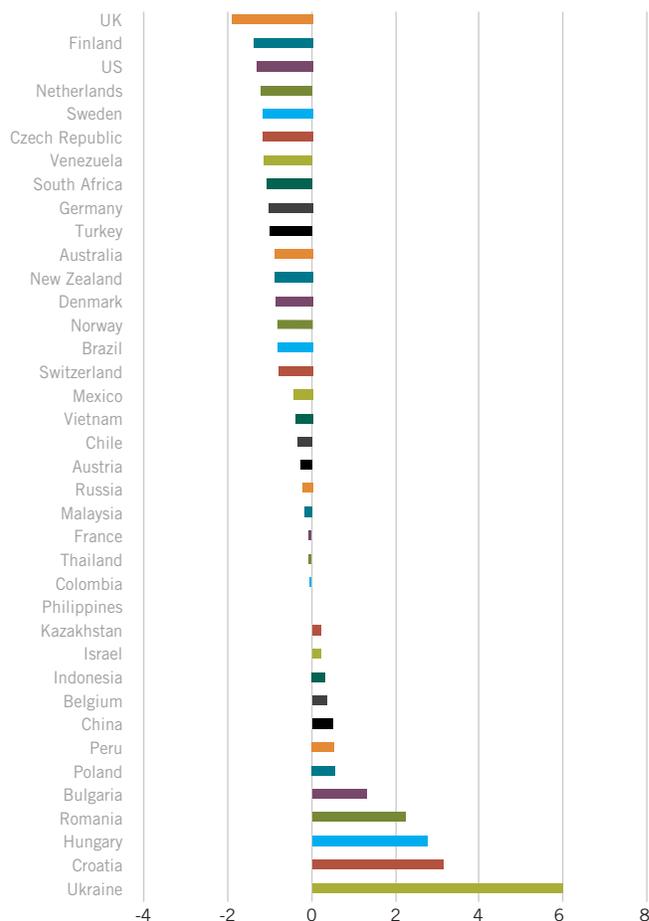
These variables are often used to determine the relative valuation of sovereign debt.<sup>6</sup> Figure 11 shows the result of this regression.

The residuals from this regression are plotted in Figure 12.

We can see from Figure 12 that sovereigns with positive yield versus the regression required yield lie below Colombia. Except for Israel and Belgium, attractive sovereign yields are all from emerging markets countries. Many of the unattractive yields (below the equilibrium yields) are from developed markets or advanced countries. There are some emerging markets that seem overvalued: the Czech Republic, South Africa, Turkey, Brazil, Mexico and Vietnam. The sovereign yields of unattractive emerging markets are all much less than their respective expected rate of inflation. As a result, they may not offer good return prospects unless inflation declines quickly.

Nevertheless, the sovereign yields from the US, UK and Netherlands are significantly worse. Not only are these yields below their respective expected rates of inflation, their issuing countries run elevated debt-to-GDP ratios, experience slower real growth and have large budget deficits. On the other hand, the countries shown on the right hand side of Figure 13 with attractive valuations mostly have positive real yields or low debt versus GDP. In addition, many have better real GDP growth. Clearly, safety and attractive yields from investing in sovereign debt today can be found in certain emerging countries and not in developed countries.

**Figure 12: May 31, 2012 Yield of Sovereign Bond Yields Less Required Yield from Regression Model (in a Percentage)**



Source: Bloomberg, CIA World Fact Book, Consensus Economics, SSgA

### Emerging Markets Currencies: Undervalued Relative to Developed Markets Currencies

In a liquidity-fueled global environment, emerging markets economies should grow faster than developed ones given the rise of domestic demand and their demographic profile. As a result, emerging markets currencies typically have higher nominal rates of interest than developed markets currencies. Judging by the real effective exchange rates in Figure 13, many emerging markets currencies may be undervalued. Some of these countries, such as India and Turkey, have historically had very high inflation. Others, such as Hungary, have poor Debt/GDP ratios. Nevertheless, adjusted for inflation, the Bank for International Settlements shows emerging markets currencies as more undervalued after accounting for inflation.

**Figure 13: How Much MSCI Country Currencies Are Undervalued as of Apr 30, 2012 (100—Real Effective Exchange Rate Indexed to 2005 as the Base Year)**



Source: Bank for International Settlements

Given their potential misvaluation, these currencies are more attractive versus developed currencies, such as those of the UK, Australia, New Zealand and Singapore, which have been hubs for hot money in the last decade's globalization (see Figure 13).

### Putting It Together: Invest in Emerging Markets Equities, Debt and Currencies Today

Because of the reasons discussed, emerging markets equities, debt and currencies all look more attractive than their developed counterparts in terms of expected future return. As a result, it is natural for investors to consider shifting their asset allocation toward emerging markets assets and away from developed markets assets. To determine how much to shift between emerging markets and developed markets assets, we need

**Figure 14: Trailing Two-Year Return Correlations until February 2012**



Source: Datastream, MSCI, JP Morgan, Citicorp, SS&A  
 Past performance is not a guarantee of future results.  
 The correlation coefficient measures the strength and direction of a linear relationship between two variables. It measures the degree to which the deviations of one variable from its mean are related to those of a different variable from its respective mean.  
 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.

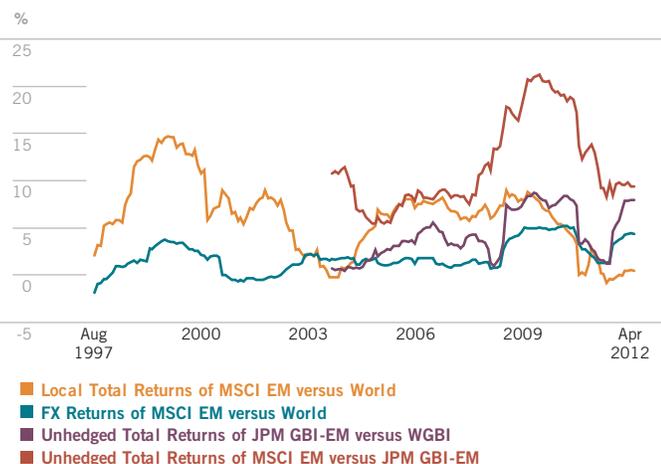
to consider mutual correlations of these asset classes, return volatility and our time horizon.

Let's first look at the correlation patterns of these assets over time. We know that the correlation of emerging markets assets and developed markets assets is considerably higher today than it has been historically. This is shown in Figure 14.

It is important to note that the two-year trailing return correlations between emerging markets equities and developed markets equities, between emerging markets bonds and emerging markets equities, and between emerging markets currencies and developed markets currencies have been quite elevated since 2008. That means their mutual diversification benefits have become very small. This decrease is driven by the increased tail risk from deleveraging that can potentially affect both emerging markets and developed markets assets. It also means that these assets have become very similar. Their relative attractiveness can be compared by looking at their respective yields versus volatility.

Figure 15 shows that emerging markets and developed markets equities now have roughly the same volatility. So, given similar P/B valuation levels, similar volatility and a mutual correlation close to one, we prefer emerging markets over developed markets equities as they generate significantly higher ROEs. If investors have a long time-horizon and liquidity is not an issue,

**Figure 15: Trailing Two-Year Return Volatility Differences between Asset Classes Through April 2012**



Source: Datastream, MSCI, JP Morgan, Citicorp, SSgA  
 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.

then it makes sense to allocate more to emerging markets equities than to developed markets equities.

Today, emerging markets equities have roughly 10% more volatility than emerging markets debt (as represented by the JP Morgan GBI-EM Index of local currency debt) and a mutual correlation close to one. We can compare this volatility to the difference between the emerging markets debt yield versus the equity dividend-discount yield. As of May 31, 2012, the GBI-EM Composite was yielding 6.8% per annum. It is roughly 6% below emerging markets firms' ROE of 12.7% per annum. Since P/B is at a very depressed level relative to its historic highs, we do not believe that valuation would compress significantly unless we see drastically declining global growth.

So conservatively, we can compare the 6% yield pick-up versus the 10% additional volatility. The *ex ante* Sharpe Ratio of at least 0.6 by being long emerging markets equities versus emerging markets debt is quite attractive. We saw before that many developed markets bonds are yielding little real yield and have worse fundamentals than selective emerging sovereign debt. However, volatility is higher for emerging markets sovereign debt. Doing a similar calculation, we see that the emerging markets local sovereign debt yields 5.4% higher per annum with an added volatility of 10%. Even if the tail event of developed markets sovereign debt selling off does not occur, emerging markets debt seems more attractive.

The correlation of emerging markets and developed markets exchange rate returns is close to one, but emerging markets currencies show roughly 5% higher return volatility when compared to developed markets currencies. So, we need to ask, can the additional yield pick-up offset the 5% higher annual volatility? As of May 31, 2012, the additional cash carry difference from currency exposures in the MSCI EM Index and US dollars is up 4.65% per annum while it is only up 9 bps per annum for the MSCI World. Consensus inflation expectations for MSCI World's currency basket are about 2% per annum and 4.1% per annum for the MSCI EM currency basket. So by investing in emerging markets versus developed markets currencies, the real yield pick-up is roughly  $(4.65\% - 4.1\%) / (0.09\% - 2\%) = 2.46\%$ . The annual Sharpe Ratio of going from developed markets to emerging markets currencies is about 0.5, which is not bad considering that the historical equity Sharpe Ratio is about 0.3 for the long-term.

## Conclusion

Considering risk versus return, emerging markets equities, sovereign debt and currencies all look attractive compared to their developed markets counterparts. The current market pricing shows the significant likelihood of deleveraging and deflation. Emerging markets equities have low P/B valuations and high ROEs that have not been affected by the latest downturn. Selective emerging markets sovereign debt is significantly more attractive than developed markets debt, as their fundamentals are better and their yields are higher than expected inflation. The US, the UK, Europe, Japan and others faced with an aging population and over-leverage, will likely experience a prolonged policy of negative real short-term interest rates. The high correlation structure across major asset classes today is a direct result of the heavy policy-driven market action. An investor with a long-term time horizon may potentially benefit by leaning against the currency depreciation policy of the developed countries and picking up yield through significant reallocation of all assets away from the developed markets and into emerging markets.

<sup>1</sup> China contributed to this overall growth significantly in that it achieved an average of 9% real growth over the last 40 years.

<sup>2</sup> This plot shows the 10-year moving average of real GDP growth rate of three developed markets regions (North America, euro zone and Japan) versus the three emerging markets regions (emerging markets Europe; Central Asia, emerging markets Asia and Pacific; and emerging markets Latin America and Caribbean).

<sup>3</sup> As of May 31, 2012, real rates are China, -0.9%; UK, -3.5%; Europe, -1.85%; and US, -2.7%.

<sup>4</sup> September 1995 is the start date of the emerging market equity fundamental data for MSCI.

<sup>5</sup> For simplicity we ignore the basis risk, which can be caused by differential liquidity, cheapest-to-deliver option and other issues, such as exchange rate expectations upon default.

<sup>6</sup> Since linear regression extracts only linear relationships, we do not include GIIPS countries as their possibility of default causes their sovereign yields to have extreme sensitivity to their debt-to-GDP ratios.

ID1252-INST-3309 0612 Exp. Date: 6/30/2013

**SCOTT CONLON, CFA**  
*Portfolio Manager Global  
Enhanced Equity*



## Adding Value in Emerging Markets Equities

**Emerging markets economies have garnered the attention of equity investors in recent years, as intriguing growth possibilities relative to developed markets economies, coupled with reasonable valuations, have prompted many to contemplate initiating or increasing overall equity portfolio exposure to developing countries. There are good reasons for both passive and active equity strategy investing in emerging markets, with the most appropriate strategy selection or combination thereof dependent upon each investor's desired level of active risk and return potential.**

For investors interested in active emerging markets equity strategies, there may exist diversification benefits to allocating capital across strategies with different investment approaches. This paper explores varying approaches to investing in emerging markets equity portfolios and compares the recent performance of these approaches.

### The Challenges of Emerging Markets Equity Trading

Trading in emerging markets equities is a bit more challenging than buying and selling developed markets stocks, as there exist greater barriers to efficiency. Reinforced by a continuously evolving and sophisticated trading infrastructure, developed markets equities generally offer traders relatively tight bid-ask spreads, high levels of liquidity and, ultimately, low transaction costs. Emerging equity trading markets have also evolved through time with improvements in trading technology and liquidity, yet they still don't offer the same degree of efficiency enjoyed in developed equity trading markets. As such, wider bid-ask spreads, lower liquidity and greater commissions result in higher

transactions costs for even the most experienced emerging markets equity traders. Also, taxation concerns have an impact on trading costs, with countries such as China (via Hong Kong) and Taiwan, among others, imposing differing levels of taxes to participate in their domestic markets.

Investment managers who have a dedicated and experienced emerging markets equity trading capability, particularly those with a global presence, are best positioned to mitigate the challenges associated with trading in emerging markets. Investment firms with emerging markets equity traders housed in regional markets have an advantage, as existing relationships with local brokers and markets best enable traders to identify local liquidity and execute trades most efficiently.

### Considering Passive or Active Investment Strategies

Deciding whether to invest in a passive or active emerging markets equity strategy, or an appropriate combination of both, is a logical place to start when thinking about emerging markets investment options. The benefits of passive investment strategies are clear and enticing: the ability to achieve index exposure, low management fees and other cost efficiencies.

Emerging markets equity indexes have historically experienced higher constituent turnover than developed market equity indexes, which require greater portfolio trading for s index replicating managers. Greater trading activity at higher transaction costs is likely to have more of a negative impact on returns for passive emerging markets equity strategies than passive developed markets equity strategies. In addition, to obtain exposure to less liquid segments of emerging markets equities, some passive managers may choose to employ a sampling approach, which can lead to portfolio returns that differ from index returns.

Figure 1: Historical Strategy Performance: Active Versus Passive as of December 31, 2012

Passive Strategies, Percentage of Excess Return	1-year	3-year	5-year	10-year
<b>Median</b>	<b>0.03</b>	<b>-0.11</b>	<b>-0.07</b>	<b>-0.21</b>
# Strategies	6	6	5	2

Active Strategies, Percentage of Excess Return	1-year	3-year	5-year	10-year
5th Percentile	8.69	7.82	6.99	5.17
25th Percentile	4.16	3.88	3.10	2.81
<b>Median</b>	<b>1.68</b>	<b>1.54</b>	<b>1.06</b>	<b>1.10</b>
75th Percentile	-1.01	-1.32	-0.72	-0.05
95th Percentile	-5.32	-3.82	-3.45	-1.33

Active Strategies, Percentage of Tracking Error	1-year	3-year	5-year	10-year
5th Percentile	9.63	8.14	10.49	8.89
25th Percentile	5.28	5.31	6.03	5.22
<b>Median</b>	<b>3.67</b>	<b>4.13</b>	<b>4.61</b>	<b>4.04</b>
75th Percentile	2.67	3.21	3.72	3.46
95th Percentile	1.76	2.28	2.75	2.59
# Strategies	187	161	132	81

Source: eVestment Alliance, SSgA  
Returns are gross of management fees.  
Past performance is not a guarantee of future results.

For all of these reasons, replicating emerging markets equity index returns is difficult, even for passive investment managers with deep experience trading in emerging markets. As highlighted in Figure 1, the median institutional passive emerging markets equity strategy has historically lagged the benchmark gross of management fees.<sup>1</sup> While not included in this universe of institutional passive strategies, emerging markets equity exchange traded funds (ETFs), with an emphasis on liquidity, often employ greater degrees of sampling, which has historically contributed to even deeper levels of underperformance.

These challenges exist not only for passive investment managers but also for active investment managers. Greater inefficiencies in emerging markets equities relative to developed markets equities result in more challenges for traders, but the less efficient nature of emerging markets economies and associated markets offers an opportunistic landscape for skilled active managers to generate alpha.

In fact, the ability to persistently generate relatively higher levels of alpha is a must for active emerging markets managers, if

only to overcome the hurdle of the higher cost of trading. As shown in Figure 1, the median institutional active emerging markets equity strategy has historically outperformed the benchmark gross of management fees.<sup>2</sup> In fact, during the past 10 years, approximately 73% of the active emerging markets equity universe has outperformed the benchmark (subject to survivorship bias).

An interesting observation from the past few years is the evolving degree of dispersion in active manager success and tracking error. The difference in relative returns between the 5th percentile (the best) and the 95th percentile (the worst) of active emerging markets strategies during the past three years is about 11.6%, just above the 11.3% average rolling three-year difference in best and worst active emerging markets strategies during the full period. This three-year difference has declined considerably in recent months, as it reached a relative high of more than 14% in June 2011.

The realized tracking error for the median active emerging markets strategy in the past three years is just below the 4.4% average rolling three-year tracking error in the full period, though this risk metric has come down considerably since its peak in mid-2009. These observations are likely a function of the historically high levels of equity market volatility experienced in 2008 and 2009, though the growing number of active emerging markets strategies with potentially differentiated investment processes may also be a contributing factor.

### Active Investing: Quant or Fundamental ... or Both?

Investors seeking an active emerging markets equity strategy would appear to have a broad universe of managers to choose from. Like any asset allocation decision, selecting multiple equity strategies with differing investment approaches is optimal from a diversification standpoint, though this endeavor is not always attainable if the investment size is small or an investor's resources are constrained. However, consideration of the diversification benefits of different active investment approaches is important.

Broadly speaking, active investment strategies can be categorized as quantitative or fundamental, or perhaps some combination of the two, in regards to the investment approach. In general, a quantitative, or quant, investment approach seeks to generate alpha via a disciplined, objective investment process that can quickly evaluate large amounts of information systematically to identify investment opportunities within a broad universe. This type of information often includes bottom-up, fundamentally oriented data to uncover mispriced stocks, and may also encompass top-down, macro-oriented data to help allocate across countries or sectors. Quantitative investment strategies are likely to employ risk constraints while seeking a certain level of tracking error.

A fundamental investment approach, while sometimes applying quantitative tools to filter its opportunity set, relies on qualitative analysis and judgment when constructing a portfolio. Similar to quant approaches, fundamental managers will employ some combination of bottom-up or top-down analysis to reach actionable investment decisions.

However, the fundamental manager tends to reach investment decisions based on deeper analysis of a smaller subset of investment opportunities, often leading to more concentrated positions at the stock level than the typical quant manager. As a result of this greater stock concentration, which is driven by a conviction in fewer ideas, fundamental strategies often are less rigorous about benchmark-relative risk constraints, which tends to lead to higher tracking error than in quant strategies.

Figure 2 displays the performance of active emerging markets equity strategies, separated by quantitative and fundamentally-oriented investment approaches, during the past decade.<sup>3</sup> The data were derived from the eVestment Alliance database, which assigns each strategy's investment approach as fundamental, quantitative or a combination of the two. Since it is not clear whether fundamental or quantitative techniques contribute more within combined investment approaches, this small category of strategies has been removed from this analysis.

There are some interesting findings in this data set. First, fundamental investment strategies have historically dominated the number of active emerging markets offerings; in the past 10 years there were more than four times as many fundamental strategies as quant strategies offered. However, the number of quant strategies seems to have been growing at a more rapid rate in recent years; the multiple of fundamental to quant strategies has shrunk to just greater than three times during the past few years.

Second, both quant and fundamental strategies have had success in generating alpha. In fact, the median quant and fundamental emerging markets strategies have outperformed the index in all historical time horizons, gross of management fees. Further, the median quant strategy has outperformed the median fundamental strategy at each historical time horizon.

Third, across all time horizons the dispersion of performance has been wider among fundamental strategies than it has been among quant strategies. The best performing fundamental strategy outperformed the best performing quant strategy in the past one, three and five years while the worst performing fundamental strategy delivered poorer returns than the weakest performing quant strategy across all time frames. This decision is likely explained by the greater focus on benchmark-relative risk management by quant strategies, as noted earlier. The higher realized tracking error by fundamental strategies lends support to this hypothesis.

Finally, the median quant strategy has delivered an information ratio (IR) that is more than three times that of fundamental strategies during the past 10 years, and in the past three years the median quant strategy's IR was more than four times that of the median fundamental strategy. Throughout the past decade, quant strategies look quite attractive from a risk-adjusted performance standpoint.

### Diversification Using Both Quant and Fundamental Approaches

While both investment approaches show evidence of delivering alpha, are there diversification benefits in allocating capital to both quant and fundamental emerging markets equity strategies? An obvious way to answer this question is to estimate the expected correlation in active returns for each type of strategy. Though this forecast correlation estimate is difficult to predict

Figure 2: Historical Strategy Performance: Quant Versus Fundamental as of December 31, 2012

Excess Returns (%)	1 Year		3 Year		5 Year		10 Year	
	Quant	Fundamental	Quant	Fundamental	Quant	Fundamental	Quant	Fundamental
5th	8.59	8.88	7.32	9.26	6.44	7.73	5.96	4.71
25th	5.72	4.15	4.73	3.84	3.64	4.04	5.14	2.47
<b>Median</b>	<b>2.54</b>	<b>1.54</b>	<b>3.35</b>	<b>0.87</b>	<b>1.86</b>	<b>0.67</b>	<b>3.14</b>	<b>0.79</b>
75th	1.09	-1.33	1.38	-1.58	0.61	-1.23	1.84	-0.35
95th	-3.80	-5.52	-0.76	-4.33	-2.22	-3.63	0.49	-1.57
Median Tracking Error (%)	3.08	4.31	3.53	4.51	3.72	4.91	3.70	4.19
Median Information Ratio	1.05	0.37	1.01	0.23	0.55	0.15	0.71	0.19
# Strategies	33	115	30	99	23	81	12	53

Source: eVestment Alliance, SSgA  
Returns are gross of management fees.  
Past performance is not a guarantee of future results.

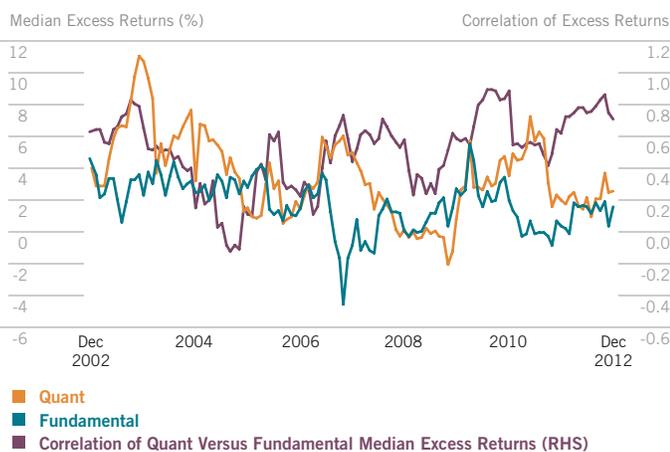
with accuracy, evaluating historical correlation patterns may help build forecasts.

Figure 3 plots the rolling 12-month excess return of the median quant and fundamental strategies in the past 10 years. Also illustrated in this figure is the correlation of active returns between quant and fundamental strategies in rolling 12-month periods. Median quant and fundamental strategies both delivered positive rolling 12-month relative performance across most of this period, with the one shared period of under performance around late 2008 to early 2009, a period associated with historically high levels of market volatility.

The correlation of active returns between the quant and fundamental strategies was lowest from 2004 through 2009, when it was 36%. However, correlation of active returns during the first year of this period, as well as during the last three years, was higher at more than 65%.

Figure 4 offers summary correlation data related to the active returns. The correlation of monthly active returns between the median quant and fundamental strategies during the past 10 years is 49%, certainly a noticeably positive number. However, the correlation of rolling 12-month active returns between the two approaches in the entire period was only 24%, a considerably lower number.

**Figure 3: Median Excess Returns in Rolling 12-Month Periods From December 2002 Through December 2012**



Source: eVestment Alliance, SSgA  
Returns are gross of management fees.  
Past performance is not a guarantee of future results.

**Figure 4: Correlation of Median EM Returns: Quant Versus Fundamental as of January 2003 through December 2012**

Monthly Active Returns Over Full Period	49%
Rolling 12-Month Active Returns, Average	24%

Source: eVestment Alliance, SSgA  
Returns are gross of management fees.  
Past performance is not a guarantee of future results.

This relationship is an indication that while the relative performance of the two strategy offerings may have been materially positively correlated during the past decade, that correlation appears to have been quite low in shorter time frames within this 10-year period. This difference would imply that there is the potential for diversification benefits by including a quantitative and a fundamental strategy within an active emerging markets equity portfolio.

### Summary

Transaction costs in emerging markets equities are considerably higher than those for developed market equities, creating greater hurdles for passive and active emerging markets managers that are likely to continue to have a negative impact on relative returns.

Throughout the most recent decade, the majority of active emerging markets managers appear to have had success in generating alpha before management fees. Both quantitative and fundamental active emerging markets equity strategies, while utilizing differentiated approaches to uncover alpha and construct portfolios, have on average outperformed the benchmark over the recent history.

If recent history is a guide for future expectations, investors seeking active management in emerging markets equities may want to consider allocating across different types of investment approaches, as there may be attractive diversification benefits during certain periods of a market cycle.

<sup>1</sup> Passive strategies universe created from eVestment Alliance and is subject to survivorship bias. Started with eA All EM Equity universe, then filtered for institutional strategies with MSCI emerging markets Index as preferred benchmark, reporting gross of management fees and passive for portfolio management strategy.

<sup>2</sup> Active Strategies universe created from eVestment Alliance and is subject to survivorship bias. Started with eA All EM Equity universe, then filtered for strategies with MSCI emerging markets Index as preferred benchmark, reporting gross of management fees and active for portfolio management strategy.

<sup>3</sup> Quant and fundamental universes created from eVestment Alliance, and are subject to survivorship bias. Started with eA All EM Equity universe, then filtered for strategies with MSCI emerging markets Index as preferred benchmark, reporting gross of management fees and active for portfolio management strategy. Next, filtered for strategies with either quantitative or fundamental as the primary investment approach.

ID2255-INST-3674 0213 Exp. Date: 2/28/2014

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## China's Leadership Transition and Its Implications for Investors

**China's leadership transition, initiated the same week as the US presidential election, is as important a development as the election of Barack Obama. Policies adopted by China in the months and years ahead will increasingly influence the global economy, the evolution of the international monetary system and prospects for global equity market returns.**

This paper briefly discusses recent developments in China, short- and medium-term policy priorities and the asset allocation implications for investors. We conclude that the Chinese economy will grow by at least 7.5% in 2013, that policy reforms are likely to be evolutionary, that with the right policy mix China can grow by at least 7% per annum for the next 10 years and that the Chinese capital market will provide investors growing opportunities in the years to come.

### Recent Developments

At the recent 18th Chinese Communist Party (CPC) Congress, the party named Xi Jinping president and Li Keqiang premier. Out of a population of 1.4 billion (20% of humanity) and a party membership of 82 million, the 2,270 delegates of the Communist Party of China (CPC) elected 350 members of the Central Committee who in turn designated 25 members of the Politburo, the Communist Party's policy-making committee. The Politburo then chose seven members (reduced from nine) to serve as members of the Politburo Standing Committee, or China's cabinet.

As secretary general of the Communist Party Xi Jinping is the country's top leader and he will also serve as president. Unlike

his predecessor, Hu Jintao, he will immediately become head of the military. The premier is charged with the day-to-day operations of the government, which is headed by the State Council, China's senior administrative body. The State Council directs 27 ministries and commissions (for example, Ministry of Finance) and 38 regulatory agencies, such as China Securities Regulatory Commission (CSRC).

The full government transition in China will take place in March 2013, but final authority rests with the CPC which controls the government. Xi Jinping, whose daughter is a college student in Massachusetts, has held several positions throughout China. He is considered a "princeling," a term the Chinese use to refer to the descendants of the top revolutionary leaders. Li Keqiang, who holds a Ph.D. in economics from Beijing University, comes from a more populist faction. Both men are expected to serve for ten years, although some members of the Standing Committee will retire in five.

The transition is important in several respects:

- It represents the fifth generation of leadership since the founding of the People's Republic of China in 1949, and it has transpired in an orderly fashion.
- Partisans of the Guangdong model—favoring market forces, development of small and medium scale industries, and more liberal policies—appear to have held in check the proponents of the Chongqing model, who favor greater state involvement in the economy, larger public works and more social spending. The expulsion from the CPC of Bo XiLai (the former CPC Chief in Chongqing), who encouraged local residents to sing songs popular in the Maoist era, can be seen both as a preemptive attack against an incipient cult of personality and as a reaffirmation of China's outward-looking policies.

- As roughly 70% of the Central Military Committee and executive committee of the State Council will also turn over, the transition represents a large change in personnel.
- It comes at a time when the global economy faces daunting challenges and when China will need to reorient its growth strategy to sustain high rates of per-capita income growth. Through massive fiscal and monetary stimulus, China avoided a sharp slowdown in the Great Recession and Global Financial Crisis. But China's new leadership will need to address the structural problems that, in 2007, led China's former premier, Wen Jiabao, to characterize China's growth as "unsteady, imbalanced, uncoordinated and unsustainable."

## China and the Global Economy

China is the world's second largest economy in nominal GDP terms and represents 10% of global output versus 22% for the US and 19% for the eurozone. Absent a major policy mistake or supply disruption, the Chinese economy will likely become larger than the US economy by 2025.

The economic transformation of China is a profound historical event. Since 1978, when Deng Xiaoping initiated reforms, the Chinese economy has grown by roughly 10% per annum, per capita income has grown by 8% per annum and 500 million people have been lifted out of poverty, defined by the World Bank as income of \$2 a day. China has emerged as a global manufacturing center and represents a major market for multinational corporations. Annual vehicle sales in China, for example, now surpass those in the US.

China increasingly impacts the world economy through multiple channels. These include the following areas:

- Global trade and commodities: China has surpassed Germany to become the world's largest exporter, and it purchases between 30 to 50% of the world's annual production of several commodities. China's fixed asset investment (FAI), including infrastructure such as high-speed trains, is a major driver of the Chinese economy and is an important driver of global exports. A recent International Monetary Fund study (Ahuja and Nabar 2012) projects likely global spillovers one year after a 1% decline in China's real total FAI. In such a case, Germany's exports would decline by roughly 85 basis points below trend and Japan's by 66 bps. Brazil and Korea export more to China than to the US, and the growth beta of some Asian economies is more sensitive to developments in China than the US.
- The exchange rate and global monetary channel: China's FX reserves stand at a staggering \$3.4 trillion, and it owns at least 11% of US debt held by the public. The internationalization of the RMB — reminiscent of the liberalization of the yen in the 1970s and 1980s — continues its gradual but inexorable pace. For example, the central banks for Japan and Korea have been granted a quota to invest a modest portion of their reserves in RMB, and a growing portion of China's trade is settled in RMB.
- During the past 10 years, foreign direct investment (FDI) into China has averaged roughly \$90 billion per annum, second only to the US. Chinese outward investment — corporate, institutional and, ultimately, retail — will increasingly influence global asset prices.
- A global environmental channel: China is the world's largest producer of greenhouse gases, with coal-fired plants being the country's principal source of electricity.

## Why Has China Grown So Fast and Why Does the Growth Model Have to Change?

Drivers of China's extraordinary economic transformation in the past several years have included a high level of investment (48% of GDP versus 16% in the US), a low rate of private consumption (35% of GDP versus 71% in the US) and a high degree of openness (exports and imports equal to 46% of GDP versus 31% in the US).

Among the many drivers of its success have been the following:

- An extraordinarily high level of savings and investment, particularly in infrastructure, which has facilitated the development of a national market.
- Liberalization of agricultural land use policies, which has given 500 million rural Chinese citizens greater incentives to produce, if not direct property ownership.
- Financial repression policies that reduced the cost of capital, subsidies and an undervalued exchange rate.
- Technology transfer, a network of overseas Chinese, and significant FDI flows. (Foreign firms account for roughly half of China's manufactured exports.)
- Privatization, the development of small- and medium-scale enterprises, and the reduction of the role of the state in the economy. State-owned enterprises, which laid off more than 40 million workers from 1997 to 2006, currently account for 26% of output versus close to 100% in 1976.

Figure 1: Annual Percentage Rate of Change in Sources of Chinese Growth

Period	Output	Employment	Output Per Worker	Contribution of			
				Physical Capital	Land	Education	Factor Productivity
1978 to 2004	9.3	2.0	7.3	3.2	0.0	0.2	3.8

Source: Bosworth and Collins (2007)

- Investment in human capital.
- Urbanization, which increases productivity. In 1949, 11% of the population lived in cities; today it is 52%.

Figure 1, prepared by economists Barry Bosworth and Susan Collins, outlines the main sources of Chinese growth.

Of particular note is the large contribution to growth of total factor productivity (TFP) or gains in total output not caused by traditionally measured inputs. (Rearranging aisles in supermarket to increase sales per employee is an example of TFP.)

As successful as China's growth strategy has been in the past 30 years, several independent studies suggest that its growth rate in the next 20 years is likely to slow to roughly 6.5% to 7.5%. Still, China would be one of the world's fastest growing economies.

To begin, as a result of the one-child policy, China's labor force will begin to decline around 2015. TFP will decline as well, as China approaches the technology frontier. In addition, China faces a declining incremental capital/output ratio (ICOR), meaning that it takes more and more investment to produce a 1% increase in output.

Also, the global environment is likely to be less favorable for continued rapid growth of China's exports, and developed markets are unlikely to accede to a world in which China accounts for 30% of global manufacturing by 2030. The insistence by the state for absolute control in seven key sectors (defense, electricity generation and distribution, petroleum and petrochemicals, telecommunications, coal, civil aviation and waterway transportation) is likely to increase rent-seeking activities by favored elites in China. These activities could lead to further malinvestment and stifle entrepreneurship and productivity gains. (A recent study shows that TFP gains in the state sector were just one third of those in the private sector from 1978 to 2008.)

In short, in a recent report entitled "China 2030—Building a Modern, Harmonious and Creative High Income Society," jointly authored by the World Bank and the Development Research Center of China's State Council, the challenge currently facing China is described as avoiding the middle income trap in which growth stalls because the policies that were so successful in the past are no longer effective in current circumstances. The report proposes six initiatives to enhance China's growth prospects:

- Structural reforms to strengthen the foundations for a market-based economy.
- Human capital deepening and the acceleration of innovation.
- Green energy policies.
- Promotion of a social safety net.
- Strengthening the fiscal system.
- Increased outward-looking policies, with China becoming a proactive stakeholder in the global economy.

In this context, we consider the economic policy priorities of China's new leaders.

### China's New Leadership Policy Priorities

China's new leaders (and Western leaders) face a daunting set of challenges. Analysts believe that the new team is conservative by nature and that changes will be evolutionary. In the short term, policy priorities include becoming better known among the Chinese people, placing allies in key ministries (the governor of the People's Bank of China has announced his intention to retire) and ensuring that the Chinese economy has indeed hit bottom this cycle. Recent manufacturing data suggest an acceleration of activity. The Chinese economy is expected to grow at least by 7.5% in 2013.

China's leadership has also targeted a 7.5% growth rate for the economy for the next several years. The medium-term policy agenda includes these goals:

- Maintaining robust economic growth, sharply increasing consumption as a percentage of output, reducing the investment share and developing the service sector.
- Fighting corruption and reducing rent-seeking activities.
- Reducing income inequality and providing a social safety net. Hundreds of millions of people in China are not covered by basic retirement and medical services.
- Increasing urbanization and, in particular, reforming China's *hukou* system. This system classifies workers as either urban or rural, restricts labor mobility and denies China's more than 150 million migrant workers in cities basic social services such as health care and pension rights.
- Implementing fiscal reform, including replacing the turnover tax with a VAT.
- Improving food safety.
- Liberalizing and deepening the financial market, and moving away from a bank-centered system to a capital market system.
- Reducing bureaucracy and adapting China's political system.
- Possibly revisiting the one-child policy.

This list is just a starting point and does not consider China's multiple foreign policy challenges.

### Implications for Investors

China's rapid rise presents investors with an ever-broadening investment opportunity set, including public equities, RMB denominated bonds, private equity, real estate and Greater China shares. Access to these instruments is likely to increase. For example, there are reportedly more than 250 IPOs in the A-share pipeline, and the Chinese Securities Regulatory Commission has gradually increased the qualified foreign institutional investor (QFII) quotas. The Chinese equity market is largely policy driven. As of mid-January 2013, the 12-month forward price-earnings ratio of the CSI 300 Index, a float-adjusted index of 300 Chinese A shares, stood at roughly 10.5.

Investors should follow events in China as closely as events in the US and Euro zone. The RMB, which has appreciated more than 19% in real effective (trade-weighted) terms since 2000, is likely to continue to appreciate, just as the yen did after World War II.

As China increasingly impacts economic activity in emerging markets as a whole, investors should consider—at a minimum—market-weighting emerging markets equities. They should also consider emerging markets small-capitalization mandates in which the bulk of the capitalization is in Asia, and possible Greater China mandates. And of course, large capitalization, multinational companies should continue to benefit from demand in China.

As Robert Shiller and others have stressed, long-term equity returns are a function of valuation at the time of entry. Investing in China involves multiple risks, including firm-specific risks such as corruption, accounting fraud and theft. Furthermore, many studies have shown that the relationship between GDP growth and equity market returns in emerging markets is weak even in the medium term. But, as Antti Ilmanen points out in his recent book, *Expected Return: An Investor's Guide to Harvesting Market Rewards*, a key driver of equity prices in the long term is real dividends-per-share growth, which tends to grow slightly less than real per-capita GDP growth, given the dilutive impact of new issuance (i.e. earnings-per-share does not grow as fast as earnings). By way of comparison, per capita income in China is expected to grow at least three times as fast as in the US in the next 10 years.

### Conclusion

Otto Von Bismarck once observed, "Man cannot create the current of events. He can only float with it and steer." Li Keqiang, China's new president, has vowed, "No stop in reform, no stop in opening up." By 2030, China is expected to have 200 million college graduates, more than the entire work force of the US. Commenting on the influence of Chinese culture on Asia—the world's fastest growing region for the foreseeable future—the American political scientist Lucian Pye remarked that, in the modern age, China remains a "civilization pretending to be a nation-state."

As economist Arvind Subramanian has argued, in the next 10 years developed economies face a fiscal problem, a growth problem and an income distribution problem. The recently released study *Global Trends 2030: Alternative Worlds*, by the US National Intelligence Council, projects four core scenarios for the

global economy in 2030. In the most favorable of these, China and the US collaborate on a range of issues such as global climate change and regional security issues in Asia. As China specialist Nick Lardy has said, “It is not *whether* China will exert influence on the international system, but how.”

The failure of the global intelligence and investor communities to predict some of the tectonic events of the last 50 years such as the collapse of the Soviet Union, the Iranian Revolution and 9/11/2001 should promote caution in speculating about the future. And certainly China at some point will experience banking and financial crises, just as every major developed market has since WWII.

It is not clear how vigorously China’s new leaders will reinvigorate the economy, just as it is not clear whether the American political system can reform long-term entitlements in the absence of a major crisis. But investors, who have suffered two devastating crashes in the past 12 years, are encouraged to think about the world probabilistically, not deterministically. In this context having a well-defined investment plan for China, whose relative growth rate is likely to be three times that of the developed world, appears a reasonable proposition.

ID2065-INST-3614 0113 Exp. Date: 1/31/2014

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## How Investors Can Benefit from Size and Liquidity Risk Premia in Emerging Markets Equities

**This paper discusses how investors can benefit from size and liquidity as priced factors in emerging markets country returns. The intuition is that in order to induce investors to hold small and/or illiquid stocks and countries, the market offers above-average returns to buyers of such positions. Moreover, in the last three decades a large body of literature has accumulated concerning size and liquidity (or illiquidity) risk premia. The former has been the subject of many papers going back to seminal work in the 1980s to 1990s, while the latter has been more of a focus in the most recent decade.**

We review the evidence on the size and liquidity premia at the firm level; we then summarize the less-researched topic of size and liquidity premia at the country level while sharing some of our own research in this area. And finally, we describe how our emerging markets Select strategy has been designed to harness these premia at the country level.

### The Firm Size and Liquidity Risk Premia

Investment can be thought of as deferred consumption. Society (the market) offers investors rewards (potential returns) for assuming various risks. Risk premia may be thought of as compensation for bearing exposure to various factors. These factors include market (systematic), size (small company) and liquidity.

### The Small-Cap Premium

Several academic studies have documented a return premium generated by small-cap stocks relative to large-cap stocks in both the US and other developed markets. These include the studies by Banz (1981), Reinganum (1981), Fama and French (1992, 1996) and Lakonishok, Shleifer and Vishny (1994). In the emerging markets, Fama and French (1998) found that small-cap stocks earned higher returns than large-cap stocks in 11 of the 16 emerging economies surveyed. Rouwenhorst (1999) documented similar results in 12 of 20 emerging markets countries. More recently, Barry (2002) reported that emerging markets small-cap stocks outperform emerging markets large-cap stocks in more than 60% of the months from 1985 to 2000.

There are various competing explanations for the small-cap premium. The main one is compensation for distress risk as small firms typically have less financial flexibility, diversified business mix and managerial depth than their large counterparts, thus increasing the risk of bankruptcy during periods of market distress. Another factor that could contribute to the small-cap effect is neglect or lack of analyst coverage which could lead to small firms being undervalued.

Finally, in the context of emerging markets, home-biased international investors' preference for large firms could drive large-caps to be overvalued. Although academic research on emerging markets small-cap stocks is less abundant relative to the literature for developed markets, given the consistent results of this phenomenon in many markets, it is not unreasonable to assume that it extends to emerging markets.

### The Liquidity Premium

The market may also reward investors who provide liquidity. What is liquidity? O'Hara (2001) defined liquidity at its broadest level as "best described by how easily and inexpensively investors can trade assets. There are many aspects to liquidity, including simple transaction

costs, the time it takes to execute trades (or immediacy) and the price impacts of trades.” Liu (2006) stated, “Liquidity is generally described as the ability to trade large quantities quickly at low cost with little price impact. This description highlights four dimensions to liquidity, namely trading quantity, trading speed, trading cost and price impact.” Zhang (2012), in a study measuring liquidity in emerging markets, similarly broke down liquidity into a transaction costs dimension and a stock price impact dimension.

In an important study entitled “Illiquidity and Stock Returns: Cross-section and Time-series Effects,” Amihud (2002) found in an analysis of US markets that, “the results show that both across stocks and over time, expected stock returns are an increasing function of expected illiquidity.” Similarly, Subrahmanyam (2010) in an examination of more than 50 variables to predict the cross-section of expected stock returns, reviewed several papers that have documented the role of liquidity as a determinant of expected stock returns. Following the global financial crisis, investors have been increasingly researching liquidity as a return factor and incorporating it into multifactor models, such as the Fama-French model (1993), that focus on size, book-to-price and the market return as explanatory variables of returns.

We want to emphasize: Given that firm size and liquidity are clearly positively related, the tests attempting to establish whether liquidity is a priced factor in the cross section of firm expected returns *control* for size in their specifications. Thus, determine whether liquidity has explanatory power that is *not* subsumed by size. At the firm level the correlation between various measures of liquidity and size is low enough (generally below 0.3) that multicollinearity<sup>1</sup> does not present problems in regression tests.

### The Country Size and Liquidity Risk Premia

The literature on the small-country effect is much sparser than its firm-level counterpart. To the best of our knowledge, the first published paper on the topic was written by Keppler and Traub (1993), and in it they show that smaller markets within developed markets in the MSCI World index have produced higher risk-adjusted returns than large markets. Hamza et al. (2007) documented higher Sharpe ratios for equal-weighted MSCI EAFE country portfolios than for GDP-weighted and cap-weighted portfolios. They attributed the result in large part to a small-country premium. Finally, in a recent contribution, Keppler and

Encinosa (2011) updated the seminal Keppler and Traub (1993) paper and concluded that the small-market effect as persisted throughout the last 18 years.

The small-market premium can potentially be explained as the market’s compensation to small-market investors for the difficulty of market access, higher transaction costs, less research, higher information asymmetries, the base effect (greater impact of liberalization on small markets) and the higher illiquidity risk being taken.

A market level liquidity premium (independent of the size premium) can be thought of as compensation to investors in more illiquid markets via higher expected returns for the larger market impact produced when liquidating the position. This phenomenon is particularly evident in periods of market (beta) sell-offs as the demand for markets more sensitive to aggregate liquidity is further reduced, thus inducing higher required expected returns. While at the firm level, a vibrant body of literature has developed on the liquidity premium, to the best of our knowledge this has not been the case at the market level.

The reason for this phenomenon, we believe, is that in a much more reduced panel of markets and with much higher positive correlation between size and market level liquidity proxies,<sup>2</sup> it becomes much harder to reliably determine the *independent* contributions of each of these factors in explaining the cross-section of market expected returns or whether one effect is subsumed by another.

### Our Conclusions

With the understanding that it is difficult to reliably disentangle the two effects but with a strong belief that should be important drivers of country returns, we test whether a combined size/liquidity proxy explains MSCI EM country returns. To understand the effects, we construct an equal-weighted average of standardized,<sup>3</sup> country free-float adjusted market cap and average dollar trading volume in the last six months.

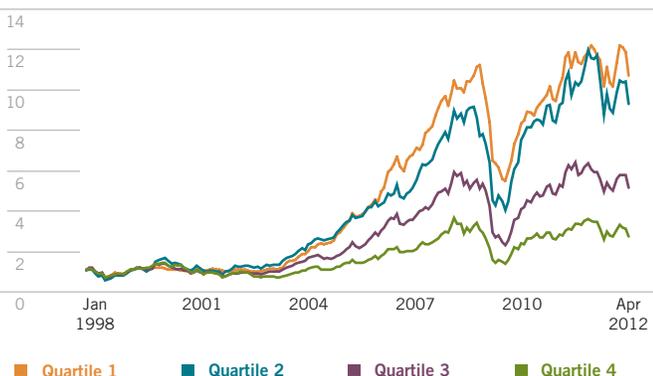
We loosely label this as a metric of “investability” and then test whether it predicts emerging markets country returns.

Figure 1 shows the cumulative returns of equally weighted portfolios of countries based on quartiles sorted by the investability

proxy. A small (low) market liquidity premium is evident as the portfolio with the lowest size and liquidity outperforms the portfolio with highest size liquidity by 13.4% per annum from January 1998 through April 2012. (By way of example, today China and Brazil are large markets with high investability, and Egypt and Morocco are small markets with low investability.)

In Figure 2, results of a Fama-MacBeth regression analysis<sup>4</sup> show in Specifications 1 and 2 that size and liquidity are statistically significant negative predictors of country returns when included independently in the regression. In Specification 3, the factor loadings maintain their sign but are not statistically significant when both are included in the regression due to multicollinearity. Specification 4 shows that even after controlling for standard market, value, and momentum factors the statistically significant negative coefficient on the size and liquidity combined proxy remains. The factor “loading” implies that for a one-standard deviation exposure to the size and liquidity proxy one would expect a statistically and economically significant 0.36% monthly or 4.4% annual premium.

**Figure 1: Gross Cumulative Quartile Returns From January 1998 to April 2012**



Source: SSgA, 2012  
 Quartile 1 represents lowest investability; Quartile 4 = highest investability  
 Past performance is not a guarantee of future results.

### SSgA's Emerging Markets Select Strategy

SSgA's emerging markets Select Strategy, which launched in 2007, attempts to exploit the country size and liquidity premia that we have in the context of a long-only portfolio of emerging markets countries and stocks. The strategy gets exposure to size and liquidity premia through a proprietary investability-tiered country allocation approach that overweights smaller countries relative to cap weighting. We use a statistical clustering algorithm to separate countries into groups that are more dissimilar from

**Figure 2: Fama-MacBeth Regressions of Emerging Markets Country Returns on Size, Liquidity, Investability Proxy and Controls**

	1	2	3	4
<b>Median</b>	1.3402* (2.56)	1.3402* (2.56)	1.3402* (2.56)	1.3402* (2.56)
<b>Market Cap</b>	-0.261* (-2.1)		-0.2379 (-1.42)	
<b>Volume</b>		-0.285* (-2.37)	-0.0911 (-0.57)	
<b>50/50 Mcap/ Liquidity Blend</b>				-0.3628* (-2.30)
<b>Beta</b>				0.2163 (0.83)
<b>Earnings-to-price</b>				0.2333 (1.35)
<b>12-Month Momentum</b>				0.0794 0.38

Source: SSgA, 2012  
 \*Indicates statistically significant coefficients at the 5% level (i.e. t-stat > 1.96)

each other in terms of investability<sup>5</sup> while grouping those that are most similar in terms of investability, and employing a dynamic tier equal-weight reversion method to shift portfolio weight from the higher investability groups to lower investability groups. We also weight countries equally within each group. The result is a country liquidity tiered portfolio of approximately 150 stocks.

### Conclusion

Following the global financial crisis, flows to emerging markets are likely to accelerate and increase market efficiency, in turn increasing the importance of getting exposure to various risk premia. Disentangling the size and liquidity premium within emerging markets countries is complex, but tilting towards these factors may offer emerging markets investors rewards relative to a cap-weighted index.

<sup>1</sup> Multicollinearity is a statistical phenomenon in which two or more predictor variables in a multiple regression model are highly correlated. In this situation the coefficient estimates may change erratically in response to small changes in the model or the data. A multiple regression model with correlated predictors can indicate how well the entire bundle of predictors predicts the outcome variable, but it may not give valid results about any individual predictor, or about which predictors are redundant with respect to others.

<sup>2</sup> The correlation between free-float adjusted market capitalization and average dollar trading volume is approx. 0.6 for MSCI EM countries over the last 14 years.

<sup>3</sup> Each period's raw values of free-float market cap and average daily trading volume are normalized before being combined.

<sup>4</sup> The Fama-MacBeth regression is a method used to estimate parameters for asset pricing models while correcting for cross-sectional correlation in residuals. The method estimates risk premia or loadings by running a cross-sectional regression each period and then averaging those loadings over time.

ID1542-INST-3457 0912 Exp. Date: 9/30/2013

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"How Investors Can Benefit from Size and Liquidity Risk Premia in Emerging Markets Equities," by Jean-Christophe de Beaulieu, Alejandro Gaba and George Hoguet, provides summary information regarding the strategy. This document should be read in conjunction with the strategy's disclosure document, which is available from SSgA. The strategy disclosure document contains important information about the strategy, including a description of a number of risks.

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