

An Update on Emerging Markets

September 2009

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Introduction

In the aftermath of the 2008 financial crisis, we take a fresh look at emerging markets to explore these questions: Have emerging markets matched growth forecasts? Which segments have performed well? How have emerging markets behaved relative to developed markets?

Emerging Markets Over the Long Run

Capitalizing on Macroeconomic Growth

Over the twenty years that the MSCI Emerging Markets (EM) Index has been in existence, its weight has grown from less than 1% to nearly 12% of the MSCI All Country World Index (ACWI). This increase reflects the growing importance of emerging markets for global institutional investors (Exhibit 1).

Exhibit 1: Emerging Markets Are an Important Component of the Global Equities Opportunity Set



Over the long run, investors have benefited from capitalizing on emerging market growth. Economic growth is tied to the expansion of capital markets for developing countries (see Briand and Subramanian (2008)).¹ Over time, a country's market size typically increases with economic development, and as capital structures are put into place, the ratio of market capitalization to GDP grows. Briand and Subramanian (2008) show that advanced financial markets tend to have market capitalization to GDP ratios that are closer to 100% while in emerging markets like China, India, and Russia, stock markets capture only a very small portion of the economy. In fact, emerging markets constitute 27% of the world's GDP (ACWI countries), more than double their free-float adjusted weight in MSCI ACWI (see Exhibit 2).

Exhibit 2 highlights the relatively large economic footprint of emerging markets (reflected by the economies' GDP and full market capitalization) compared to their current weight in MSCI ACWI. The difference across these numbers suggests that the opportunity set for emerging markets may

¹ In the last two decades, several major geopolitical events have triggered the process of adoption of free market reforms resulting in the opening of many markets. For example, the demise of the Soviet Union, the collapse of apartheid in South Africa, and the adoption of more liberal economic policies in China and India have contributed to the development of freer markets. The newer investment opportunities are potentially significant. Saudi Arabia and the China domestic market (A shares) are still closed to most international investors. Frontier Markets including the Gulf countries are open but still difficult to access.

be even larger than what economic growth would imply. Future changes in the shareholder structure may further increase the potential for growth in the free-float market cap.

Exhibit 2: Opportunities for Market Growth

| | Weight Based on Float Adj. Market Capitalization* | Weight Based on Full Market Capitalization | Weight Based on GDP** |
|-------------------|---|--|-----------------------|
| Developed Markets | 88.05% | 77.00% | 72.69% |
| Emerging Markets | 11.95% | 23.00% | 27.31% |

*MSCI ACWI weights as of August 19, 2009. Full market cap is also as of August 19, 2009.

**GDP weight based on 2008 MSCI ACWI GDP Country Weights.

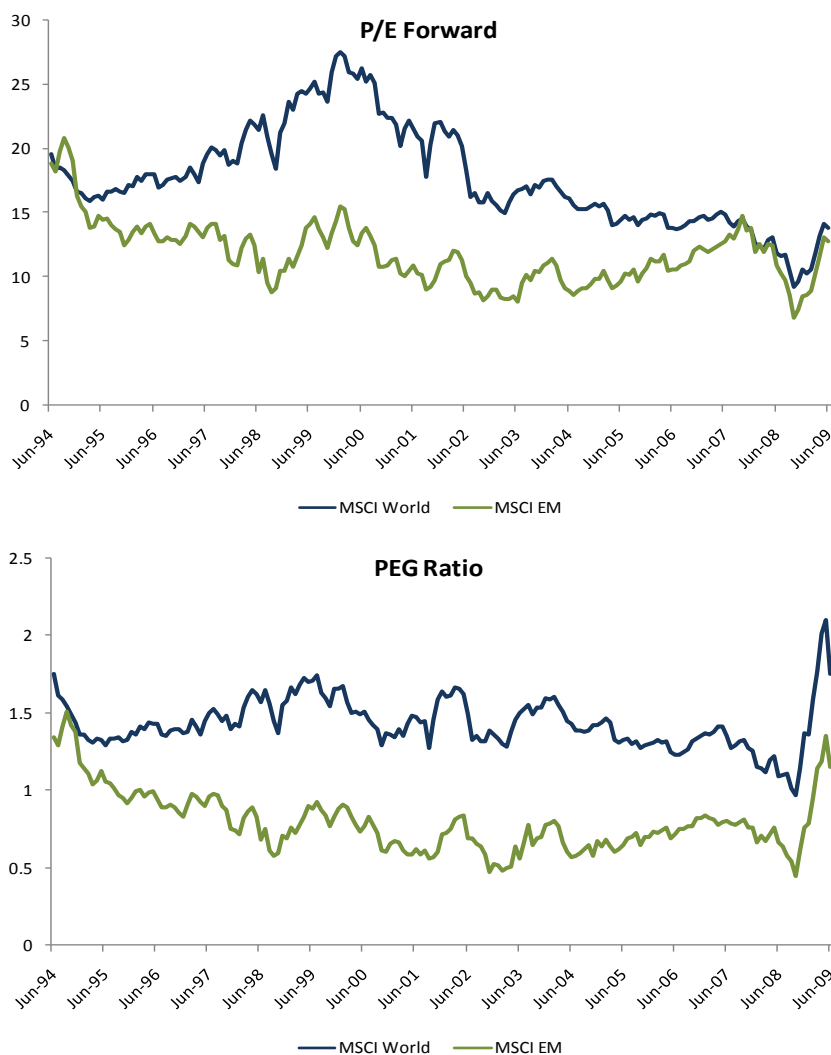
Exhibit 3 summarizes the average annualized returns of the three major MSCI indices along with their risk-adjusted returns. Over the entire period, 1990-2009, the MSCI EM Index has earned higher unadjusted returns and risk-adjusted returns compared to the MSCI World Index. Despite intermittent crisis periods, risk has been compensated over the long run.

Exhibit 3: Average Annualized Returns of MSCI ACWI, MSCI World Index and MSCI EM Index. (Jan 1990-July 2009)

| | MSCI ACWI | MSCI World | MSCI EM |
|--|-----------|------------|---------|
| Average Annualized Returns | | | |
| 1990-2009 | 4.7% | 4.4% | 10.6% |
| - 1990s | 10.4% | 10.7% | 11.8% |
| - 2000s | -1.1% | -1.8% | 9.3% |
| Risk-Adjusted Annualized Return | | | |
| 1990-2009 | 0.30 | 0.29 | 0.43 |
| - 1990s | 0.74 | 0.76 | 0.49 |
| - 2000s | -0.06 | -0.11 | 0.37 |

Stocks in emerging markets often have had attractive valuations relative to their developed market counterparts. The forward price-to-earnings ratio for the MSCI EM Index has averaged 11.8 since June 1994, compared to 17.8 for the MSCI World Index. In recent years, however, the traditional valuation discount associated with emerging markets risk has evaporated for P/E or P/BV, although PEG ratios still denote a persistent risk premium.

Exhibit 4: Valuation Ratios for Developed vs. Emerging Markets



Emerging markets constitute a non-negligible part of the opportunity set for global investors. They allow investors to take advantage of the relatively greater set of economic growth opportunities in the developing world, as well as attractive valuations. In fact, because forecasts of economic growth don't take into account increases in free float through the effect of market liberalization on ownership structure, they may underestimate the actual growth potential.

Country Allocation Still Dominates Emerging Market Returns

Prior research at MSCI Barra has delved into the sources of return and risk for emerging markets (see for instance, Nielsen and Puchkov (2007)). This research shows that emerging markets are largely dominated by country effects, as opposed to industry or style effects.

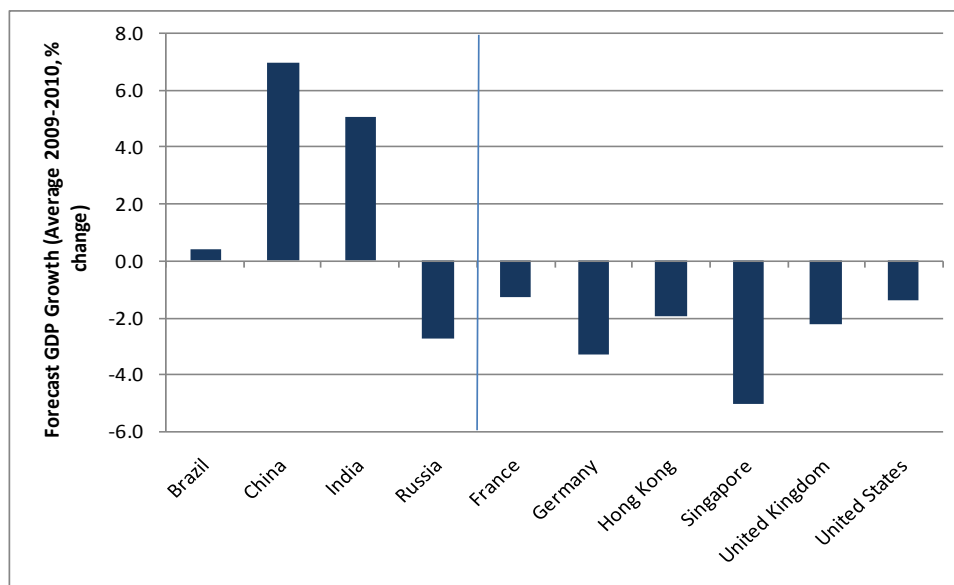
The importance of the country factor is supported by Briand and Subramanian's (2008) categorization of the three stages of development:

- **Stage 1 (Emergence):** Countries typically have low levels of GDP per capita. Their economies are heavily influenced by government or are dominated by family-controlled conglomerates that benefit from political connections. The stock market is narrow, composed typically of banks, conglomerates, and local utilities, mostly telecommunications.
- **Stage 2 (Expansion):** The economy has specialized along its natural competencies; companies are starting to address markets outside their country of domicile. The export drivers can be natural resources or manufacturing. To finance their expansion, companies need capital and want to diversify their investor base, so they seek international investors. The stock market starts to broaden and newly-listed companies reshape the profile of the market. At this stage, countries have also improved their legal and regulatory framework, and incorporated laws that seek to protect the common interests of international investors, facilitating access to foreign capital.
- **Stage 3 (Maturity):** The country enjoys high GDP per capita and is integrated into the global economy. Global stocks constitute a higher percentage of the stock market.

As economies emerge (in Stages 1 and 2), they only gradually become integrated into the global economy and are likely to be dominated by country-specific influences. The rare exceptions are those nascent economies that emerge with a heavy dependence on global industries such as energy, oil, precious metals, and other globalized commodities. The importance of country membership for stock return behavior means that economic decoupling typically implies greater financial decoupling.

Exhibit 6 shows forecast changes in GDP reported by the IMF. The BRIC countries—Brazil, Russia, India, and China—are shown, all of which (with the exception of Russia) have stronger growth forecasts over the next two years, relative to major developed countries.

Exhibit 6: Economic Forecasts Diverge Over the Next Two Years



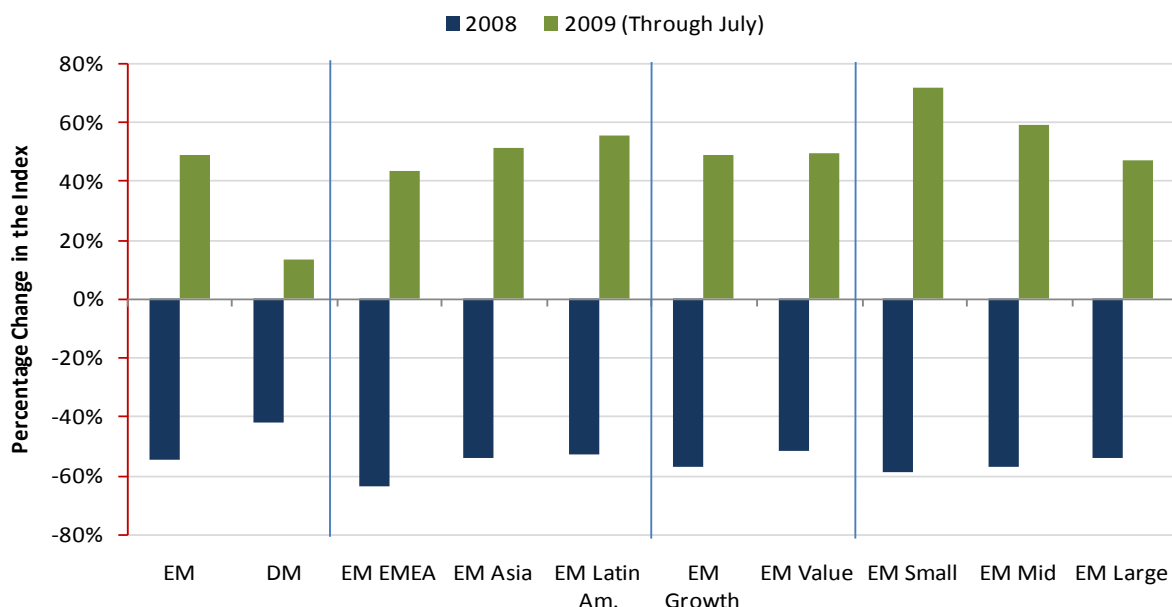
Source: IMF Forecasts (2008) for 2009-2010

Where Are We Now? An Overview of 2008-2009

The shakeout in global markets has left few countries unscathed. Both the MSCI World and Emerging Market Indices experienced their greatest annual loss in 2008. However, since the start of the year, the MSCI EM Index has rebounded stronger than MSCI World: the MSCI EM Index rose by 49% through the end of July 2009 compared to 14% for the MSCI World Index. While it may be too soon to definitively assess the recovery, a certain amount of decoupling in markets has occurred since the start in 2009, in keeping with the economic decoupling reflected by the IMF GDP forecasts.

Exhibit 7 shows the returns to the major MSCI indices in 2008 compared to the first seven months of 2009. The first panel shows the significant rebound in the MSCI EM Index. Latin America, which was relatively resilient in 2008, has led the rebound. Small cap stocks were hit the hardest among cap segments in 2008 but have rebounded significantly. Both value and growth stocks have performed well in 2009.

Exhibit 7: Snapshot Summary of Performance in 2008-2009

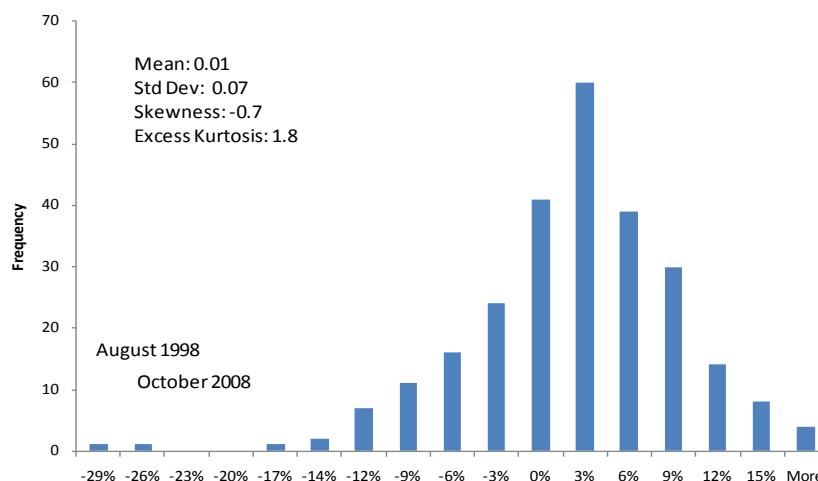


How Extreme is Extreme? The 2008 Crisis in Context

Where does the recent crisis fit in historical context? For many institutional investors, the 2008 crisis has prompted a reevaluation of the relative riskiness of equity types previously considered relatively safe.

Exhibit 8 shows a histogram of the monthly returns to the MSCI EM Index from January 1998 to July 2009. The significant market dislocation of October 2008 is still to the right of the Russian ruble crisis of August 1998.

Exhibit 8: Monthly Returns to the MSCI EM Index Are Not Normally Distributed



For developed markets, October 2008 was also a significant outlier. In fact, that month was the largest negative outlier for the MSCI World Index. This begs the question: how much more non-normal are emerging markets in reality?

Exhibit 9 compares the return characteristics across developed and emerging markets. The excess kurtosis for both the MSCI World and EM Indexes is similar and both indices experienced the same number of 3-standard deviation-plus declines. The evidence is not clear, at least using monthly returns, that emerging markets are significantly more susceptible to non-normal declines. It could be that bigger losses may be attributable solely to higher volatility.

Exhibit 9: But Are Developed Markets Any More Normally Distributed?

| | MSCI AC World | MSCI World | MSCI EM |
|---|---------------|------------|---------|
| Summary of Performance, Jan 1988-June 2009 | | | |
| Mean (Annualized Return) | 5.9% | 5.7% | 13.8% |
| Standard Deviation (Annualized Risk) | 15.5% | 15.2% | 24.4% |
| Mean/Std Dev (Risk-Adjusted Return) | 0.38 | 0.37 | 0.56 |
| Skewness | -0.71 | -0.67 | -0.70 |
| Kurtosis | 1.78 | 1.59 | 1.77 |
| Downside Standard Deviation | 11.9% | 11.6% | 18.9% |
| Number of Months Return < - 3 stdev | 2 | 2 | 2 |
| Upside Standard Deviation | 8.3% | 8.2% | 13.2% |
| Number of Months Return > 3 stdev | 0 | 0 | 0 |

To what extent did the large monthly declines in Exhibit 9 occur simultaneously for emerging and developed markets? Exhibit 10 shows the average losses sustained by the MSCI EM Index

during the worst months of performance for the MSCI World Index. (For comparison, the average losses for the MSCI EM Index are shown in parentheses for its own worst months; these are in fact not much bigger). Large losses tended to coincide; two of the three worst months of performance for both indexes coincided – August 1998 and October 2008.

Exhibit 10: MSCI EM Historical Shortfalls During Developed Market Episodes (January 1988- July 2009)

| MSCI EM Historical Shortfall Conditional on MSCI World | |
|--|-----------------|
| Worst 1% of Months | -24.8% (-24.8%) |
| Worst 5% of Months | -13.7% (-16.1%) |
| Worst 10% of Months | -10.4% (-12.8%) |

Exhibit 10 captures the incidence of joint or simultaneous declines and focuses on short-term movements in the two indices.

We can also look at maximum drawdowns, which better capture the size, length, and depth of past crises. Maximum drawdown is defined as the largest drop from peak to trough over a certain period. We calculate the maximum drawdown for the MSCI World and EM Indices separately in Exhibit 11 for major recent crises.

The 1997-1998 period encompassing the Asian financial crisis and Russian ruble crisis saw a long retrenchment and recovery period for the MSCI EM Index, while its impact on the MSCI World Index was short-lived. During the 2000-2002 period encompassing the tech bubble collapse and subsequent recession, both developed and emerging markets experienced a lengthy period of decline followed by a slow recovery.

Exhibit 11: Drawdowns and Recoveries

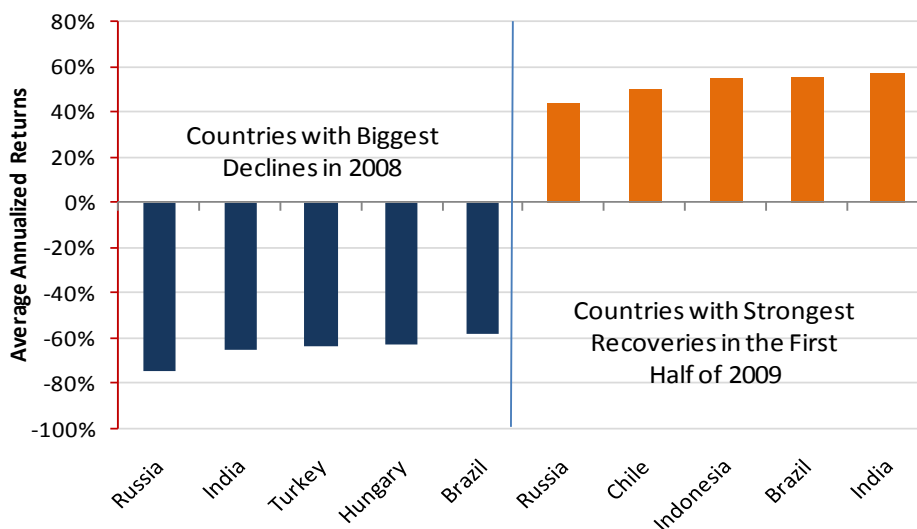
| | MSCI World (Developed Markets) | | | MSCI EM (Emerging Markets) | | |
|--|-----------------------------------|-----------------------------|------------------|-------------------------------|-----------------------------|------------------|
| | Cumulative Return | Length of Maximum Draw down | Time to Recovery | Cumulative Return | Length of Maximum Draw down | Time to Recovery |
| 1997-1998 Asian Financial Crisis/LTCM Crisis | -14% | 2 mths | 3 mths | -57% | 13 mths | 6.7 yrs |
| 2000-2002 Tech Bubble Collapse/Recession | -48% | 2.5 yrs | 4.2 yrs | -44% | 1.5 yrs | 3.1 yrs |
| 2008 Global Crisis | -55% | 1.3 yrs | N/A | -63% | 1.3 yrs | N/A |

Maximum drawdown is measured as the percentage change in the index. Time to recovery is measured as length of time before pre-drawdown cumulative returns are reached. Maximum drawdown measures peak to trough for each index. Maximum drawdown periods for the MSCI World Index are: Asian/LTCM: June 1998 to August 1998; Tech Bubble Collapse: March 2000 to September 2002; and Global Financial Crisis: October 2007 to February 2009. Maximum drawdown periods for the MSCI EM Index are: Asian/LTCM: July 1997 to August 1998; Tech Bubble Collapse: March 2000 to September 2001; and Global Financial Crisis: October 2007 to February 2009. The Asian and Russian crises are combined for drawdown calculations due to the proximity of these two episodes.

What about the recent performance of countries and sectors within emerging markets? EMEA (Europe, Middle East, and Africa) was the hardest hit region in 2008 and has lagged behind other regions in 2009's rebound. Meanwhile, Latin America was the most resilient in 2008 and has enjoyed the strongest gains so far in 2009.

Exhibit 12 shows those countries with the largest losses in 2008 and the biggest gains in 2009. Some of the key markets hit last year—Russia, India, and Brazil—have rebounded rapidly already in 2009.

Exhibit 12: Emerging Markets with the Most Significant Moves in 2008 and 2009

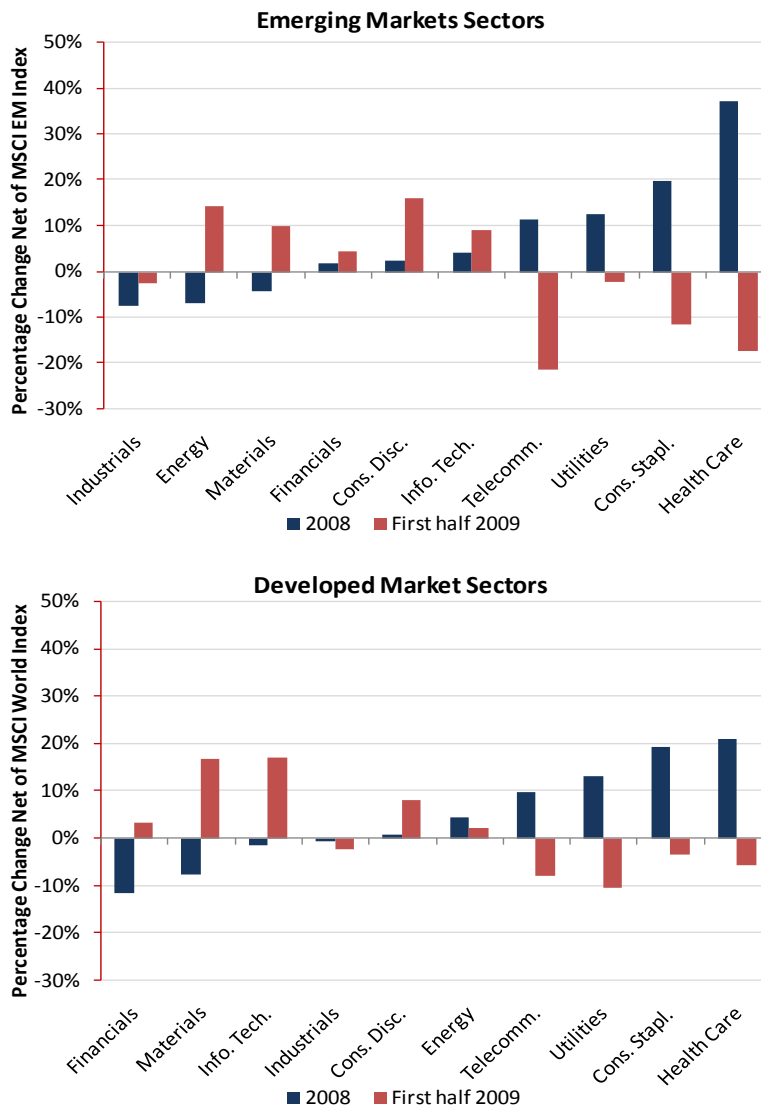


While many of the markets that experienced the largest losses in 2008 have recovered strongly in the first half of 2009, not all have. EMEA markets like Poland and the Czech Republic have remained mired relative to other markets. Past crises have similarly seen a mix of recovery speeds for emerging markets which depend on country-specific factors. During the tech bubble collapse, Indonesia, Thailand, and Taiwan were among the hardest hit but quickly recovered, while other hard-hit markets like Egypt and Turkey took much longer to recover.

Like countries, many of the sectors that experienced the biggest losses in 2008 have rebounded the most quickly in 2009. These include energy and materials. The picture in developed markets differs slightly. There, materials and information technology have been strong in 2009 as they have in emerging markets, while sectors like utilities continue to be relatively anemic.

Exhibit 13 shows sector returns net of the MSCI EM Index.

Exhibit 13: Sector Moves in 2008 and 2009



The divergence in sector performance (excess of the core benchmarks) for the most recent crisis is smaller than it was during previous crises. For certain sectors as shown in Exhibit 14, the recent crisis has seen larger spreads between developed and emerging markets. Health care in particular has exhibited the greatest divergence, remaining relatively resilient in emerging markets. Financials in emerging markets fell by less than in developed markets in contrast to previous crises.

Exhibit 14: Sector Spreads Across Developed and Emerging Markets During the Global Financial Crisis Have Been Tight (Cumulative Returns Net of MSCI World and EM Indices)

| | Asian/Russian Crisis | | Tech Bubble Collapse | | Global Financial Crisis | |
|------------------------|----------------------|------|----------------------|------|-------------------------|------|
| | DM | EM | DM | EM | DM | EM |
| Energy | -13% | -6% | 33% | 29% | 10% | 0% |
| Materials | -21% | 1% | 18% | 25% | -3% | -3% |
| Industrials | -12% | -11% | 12% | -1% | -3% | -10% |
| Cons. Disc. | 3% | -3% | -6% | -7% | 1% | 1% |
| Cons. Staples | 7% | 11% | 49% | 28% | 22% | 18% |
| Health Care | 15% | 19% | 43% | 45% | 21% | 51% |
| Financials | -2% | -1% | 25% | 10% | -16% | -3% |
| Info. Tech. | -1% | 7% | -39% | -26% | 3% | 5% |
| Telecomm. | 35% | 2% | -26% | -13% | 11% | 10% |
| Utilities | 23% | -10% | 35% | 11% | 15% | 15% |
| Avg. Abs. Diff. | 12% | | 11% | | 7% | |

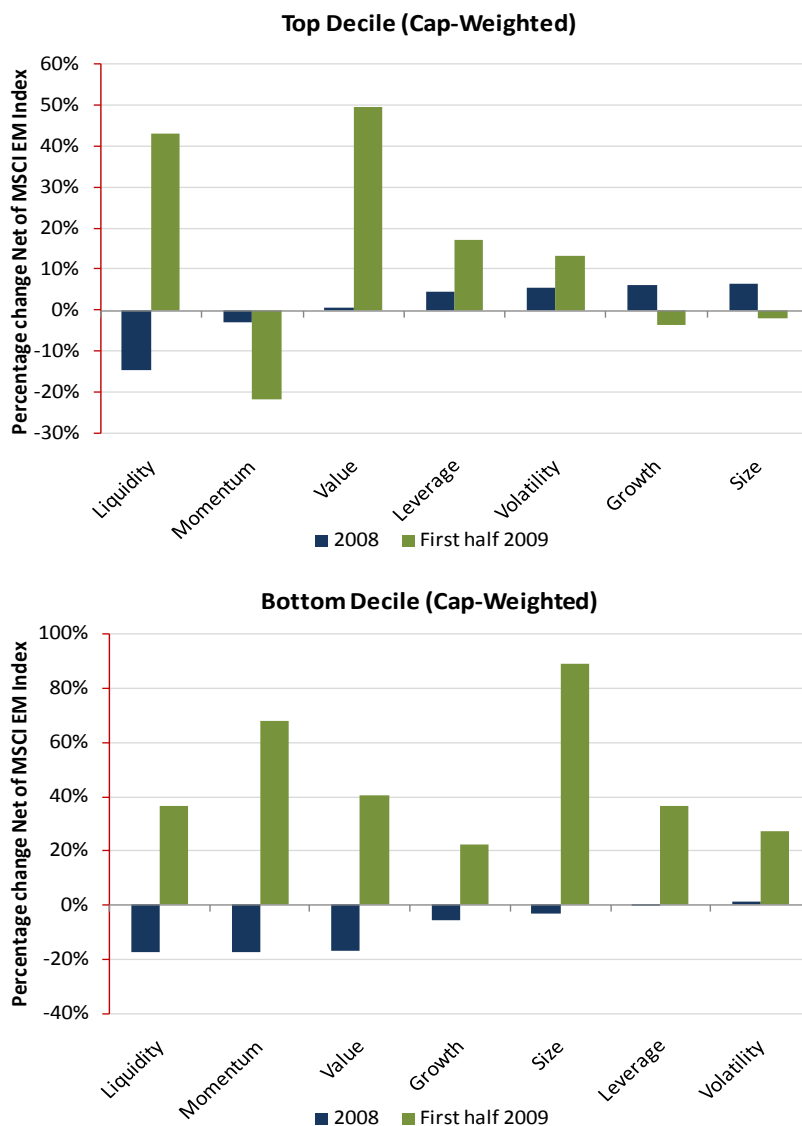
Crises periods used are: Asian/LTCM: July 1997 to August 1998; Tech Bubble Collapse: March 2000 to September 2001; and Global Financial Crisis: October 2007 to February 2009.

Finally, we look at the performance of stocks with different style characteristics in the past year. We use seven styles in the Barra Global Equity Model (GEM2): value, growth, size, liquidity, momentum, leverage, and volatility. We rank all the stocks in the MSCI EM Index by their GEM2 style exposures and take cap-weighted returns for the bottom and top deciles. (Note that in GEM2, momentum and volatility exposures are standardized globally while the other six style factors are standardized on a country-by-country basis.²)

² In other words, stocks with high exposure to volatility in one country will have similar volatility characteristics, like beta, to stocks with high exposure to volatility stocks in another country. Meanwhile stocks with high exposure to leverage in one country may not have similar leverage characteristics as stocks with high exposure in another country. Note that the momentum and volatility portfolios therefore may be prone to larger incidental exposures to certain countries or industries if stocks with very high or low exposure are concentrated in a handful of countries or industries.

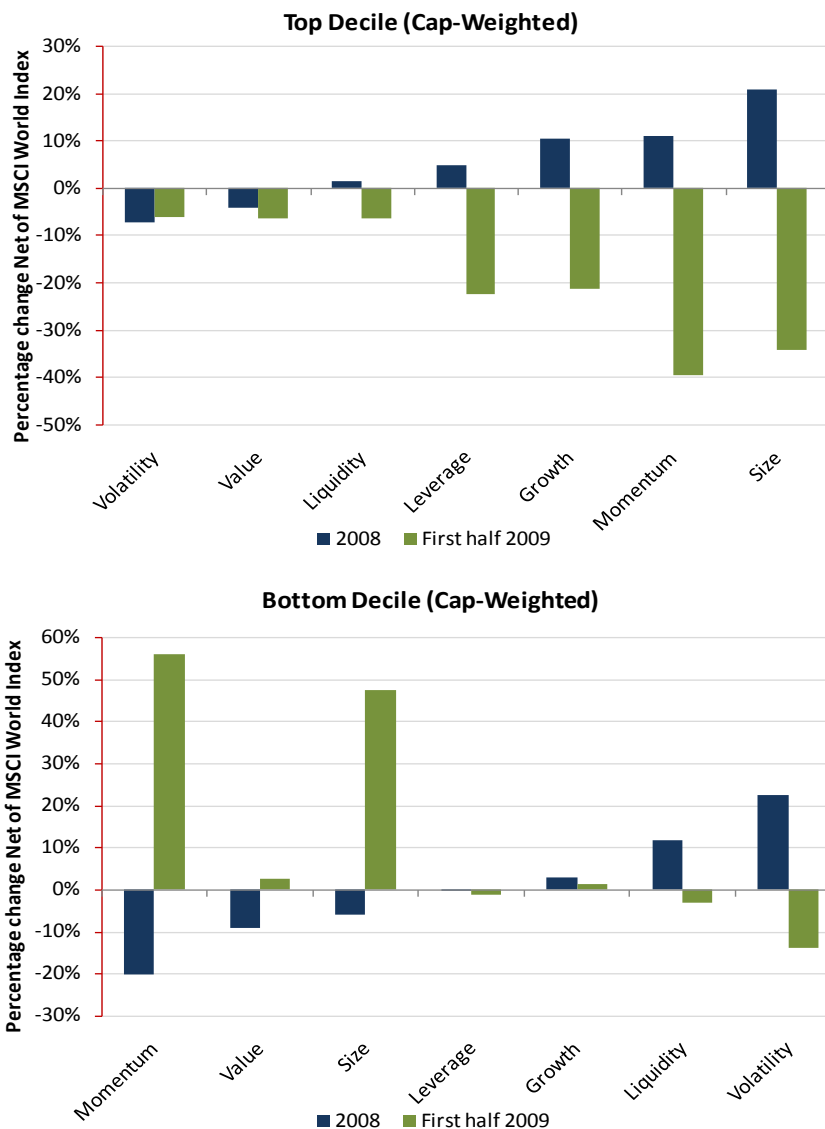
Exhibit 15 summarizes how the top- and bottom-decile portfolios performed. Again, we show the cumulative returns net of the MSCI EM Index. Emerging market liquidity and momentum portfolios at both extremes (the top and bottom deciles) were hit in 2008 relative to the MSCI EM Index. Levered and volatile stocks, also at both extremes, as well as growth stocks and large caps, all performed relatively well. Since the start of the year, liquid, value, and small-cap names have experienced the largest gains while momentum stocks have yet to recover.

Exhibit 15: Emerging Markets Style Characteristics Performance in 2008 and 2009



How do the returns to these emerging market style segments compare to developed markets? In contrast to emerging markets, as shown in Exhibit 16, stocks with high exposure to volatility and value were among the worst performing segments in 2008 whereas momentum stocks did not see the same losses as in emerging markets. So far in 2009, only low-momentum stocks (past losers) and small caps have experienced large gains in developed markets, which mirrored what occurred in emerging markets.

Exhibit 16: Developed Markets Style Characteristics Performance in 2008 and 2009



Like the sector differences, the differences in style performance between developed and emerging markets have also been narrower in the recent crisis. In the past, differences have tended to be significant between developed and emerging markets on average. In only a handful of segments shown in Exhibit 17 is performance similar across emerging and developed markets. While it is difficult to definitively characterize which segments in any crisis (a function in part on

the type of crisis and regime preceding the crisis), there have indeed been differences historically between developed and emerging market stocks.

Exhibit 17: Style Spreads Across Developed and Emerging Markets Diverge Significantly in Some Cases (Cumulative Returns)

| Top Decile | Asian/Russian Crisis | | Tech Bubble Collapse | | Global Financial Crisis | |
|----------------------|----------------------|------|----------------------|------|-------------------------|-----|
| | DM | EM | DM | EM | DM | EM |
| Top Decile | | | | | | |
| Growth | 60% | 29% | -21% | 11% | 10% | 11% |
| Leverage | 59% | 24% | 49% | 21% | -5% | 15% |
| Liquidity | 61% | 41% | -8% | -1% | 0% | 1% |
| Momentum | 70% | 37% | -5% | 20% | 8% | -1% |
| Size | 62% | 28% | 16% | 22% | 16% | 13% |
| Value | 67% | 33% | 77% | 55% | -12% | 13% |
| Volatility | 42% | -6% | -29% | 11% | -12% | 14% |
| Avg. Abs. Diff. | 34% | | 23% | | 12% | |
| Bottom Decile | | | | | | |
| Growth | 68% | 21% | 32% | 17% | 9% | 13% |
| Leverage | 65% | 25% | 6% | 33% | 8% | 21% |
| Liquidity | 0% | 29% | 13% | 47% | 14% | 4% |
| Momentum | -27% | -58% | -24% | -10% | -19% | 1% |
| Size | -18% | -24% | -20% | -6% | -8% | 29% |
| Value | 16% | -20% | -40% | -6% | -5% | -3% |
| Volatility | 24% | -9% | 58% | 31% | 24% | 17% |
| Avg. Abs. Diff. | 32% | | 23% | | 13% | |

Crises periods used are: Asian/LTCM: July 1997 to August 1998; Tech Bubble Collapse: March 2000 to September 2001; and Global Financial Crisis: October 2007 to February 2009.

Conclusion

The 2008 crisis has offered another look at how emerging market stocks have behaved relative to developed markets. While in the aggregate, emerging market stocks were not immune to the crisis, there were some clear differences between emerging and developed markets in the performance of particular sectors and styles. We highlight several important insights:

- Emerging markets remain a critical part of the global opportunity set. In particular, the economic footprint of emerging market equities based on full market capitalization remains larger than current free-float-based allocations. If the opening of capital markets further increases the free float through changes in ownership structure, future growth would exceed economic growth forecasts.
- Differences in the performance of particular sectors and style segments hint at a certain amount of decoupling that has occurred between emerging and developed markets.
- From a risk perspective, the recent crisis has reminded investors that both developed and emerging markets experience tail events. The magnitude and exact nature of the impact on each segment has historically depended on the particular crisis in question but there have been stark differences between developed and emerging markets.

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