

Market Review

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Diversification benefits, risk and alpha potential of global equity markets

In this first-quarter commentary we revisit the topics of diversification and risk in global equity markets.¹ This year, we add a third section: alpha potential in global markets as measured by the Russell-Parametric Cross-Sectional Volatility Indexes (CrossVol™).² In constructing investment portfolios, investors may benefit from information about which markets have offered greater opportunities for skilled active managers, as well as which markets have provided attractive diversification potential at reasonable levels of risk.

Generally, we find:

- Correlation and volatility levels have begun to fall as markets recover from the global crisis/recession period, but all remain at higher than pre-crisis levels.
- Volatility levels have dropped more dramatically than correlations.
- Cross-sectional volatility in markets has been lower than historic norms, except in developed Europe, especially in the value sector. This may reflect investors' distinguishing among the countries/companies in the Eurozone.
- Over the last 12 months, the U.S. small cap market had the highest cross-sectional volatility of all markets examined; other small cap markets offered high levels of alpha potential, as did emerging markets.
- A comparison of 21 major markets reveals that the Pacific Basin developed small cap market offered the best combination of all three elements: diversification potential, lower risk and higher alpha potential.

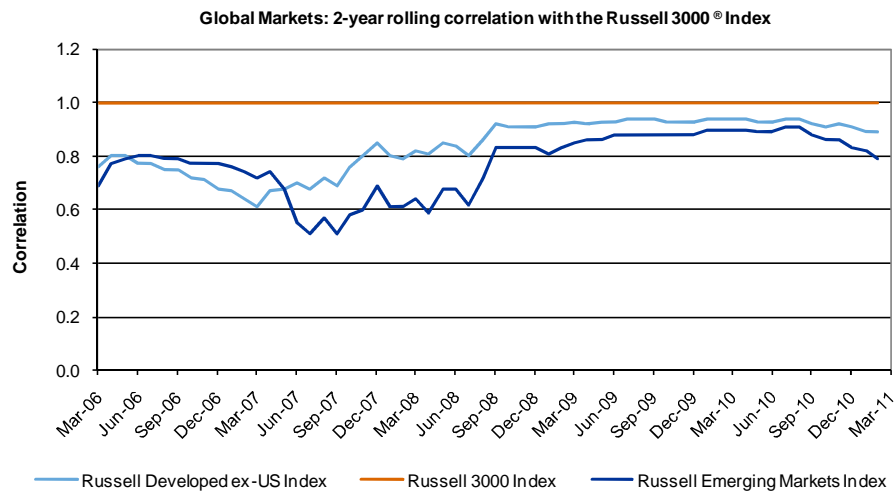
¹ For 2009 and 2010 Commentaries, see S. Orzell and J. Olson, 2010: "Diversification of international and global markets," *Russell Indexes Quarterly Commentary*, April; see also M. Fjelstad and S. Orzell, 2009: "Diversification of international and global markets," *Russell Indexes Quarterly Commentary*, April.

² See P. Bouchev, M. Fjelstad and H. Vadlamudi, 2010: "Measuring alpha potential in the market: using the Russell-Parametric Cross-Sectional Volatility Indexes," *Russell Research*, September.

Global equity markets: correlations drop in fall 2010

Over the course of the second half of 2010 and into 2011, equity markets began to decouple. Figure 1 illustrates this countermovement, showing a decrease in correlation³ between global markets and the U.S. broad market.⁴ Developed ex-U.S. and emerging markets had moved in lockstep with the U.S. markets ever since the beginning of the financial meltdown in September 2008. However, markets began to move more independently of the U.S. broad market in October 2010 and have continued this trend through the end of first-quarter 2011. Decreasing correlations suggest greater diversification opportunities for global investors.

Figure 1



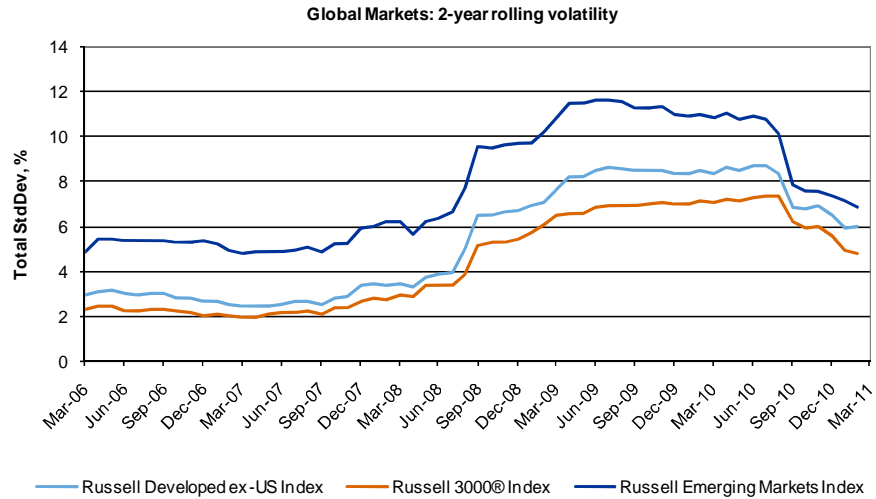
Indexes are unmanaged and cannot be invested in directly. Returns shown here and in subsequent figures represent past performance, are not a guarantee of future performance and are not indicative of any specific investment.

³ All correlations and volatilities are measured on the basis of rolling 24-month performance, unless otherwise noted.

⁴ Throughout this report, we use Russell Indexes to measure the performance of global equity markets. See the table in the appendix for the complete mapping of Russell Indexes to global markets, regions and styles.

Volatility dropped dramatically in the last year, approaching pre-2008 levels. As economies around the globe began to find their footing in 2010 and into this year, developed ex-U.S. and emerging markets experienced declining levels of volatility, bringing them more in line with the U.S. market. The U.S. market has consistently been less volatile than developed ex-U.S. and emerging markets, as seen in Figure 2, which displays 24-month rolling standard deviations.

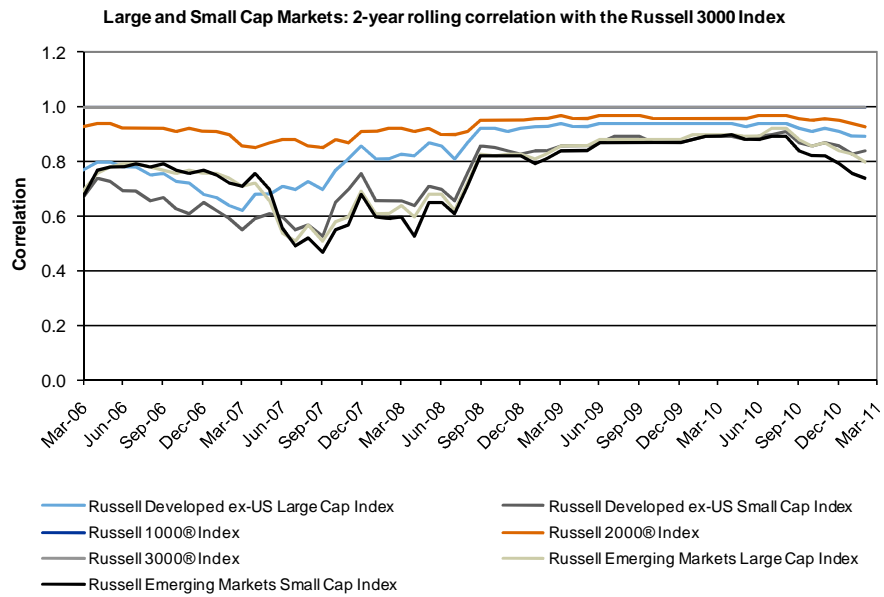
Figure 2



Global large and small cap: does size bring diversification in post-crisis markets?

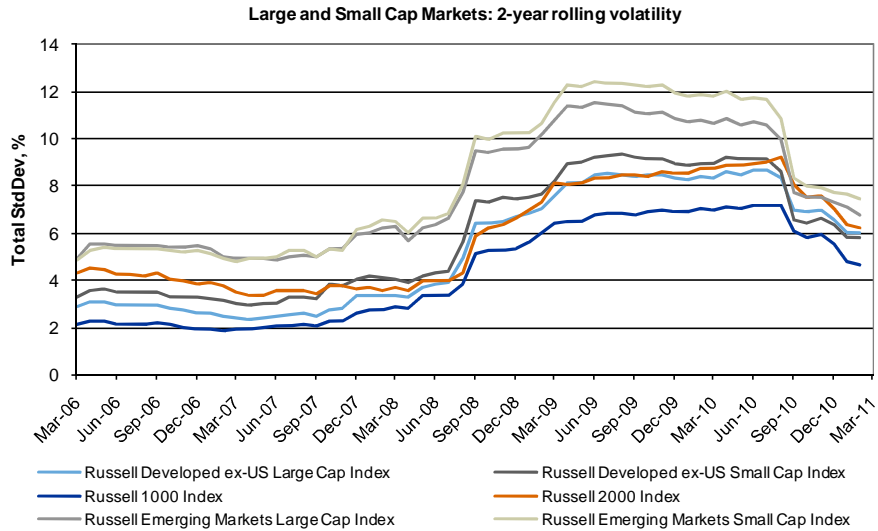
The large cap segments of U.S., developed ex-U.S. and emerging equity markets have continued to be more highly correlated to the U.S. broad market than small cap market segments have been. The least correlated market segment in this group is emerging small cap, with correlation to the U.S. broad market declining to 0.74 in March after peaking in May 2010 at 0.90. Figure 3 displays the correlations of large and small cap segments of developed ex-U.S., emerging and U.S. markets to the U.S. broad market. While all market segments' correlations trended down since June 2010, we note that in March 2011, that of the U.S. small cap market experienced a slight uptick.

Figure 3



The decreased correlation of the emerging small cap markets came at the cost of higher volatility relative to developed and large cap markets. While volatility dropped in both large and small cap markets, it still remains elevated compared to the calmer years of 2003–2007.

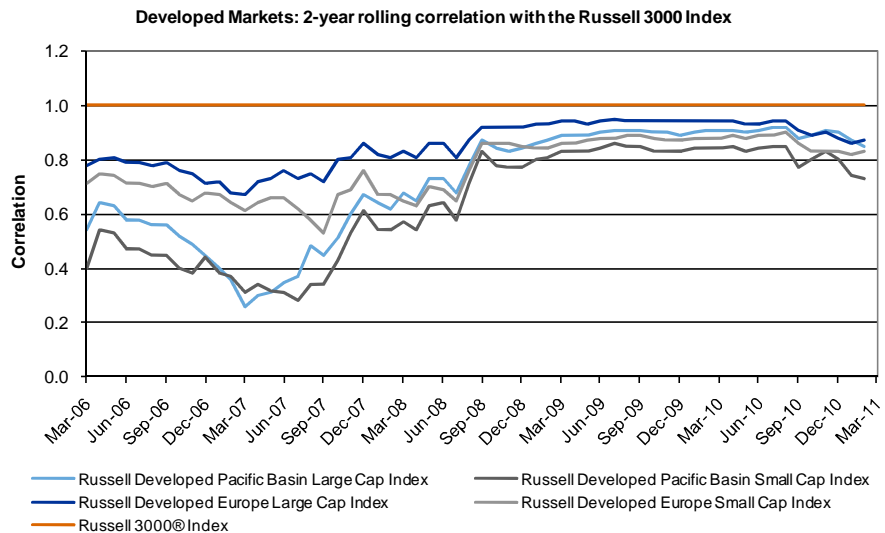
Figure 4



Non-U.S. developed regions: Pacific Basin remains best bet for diversification

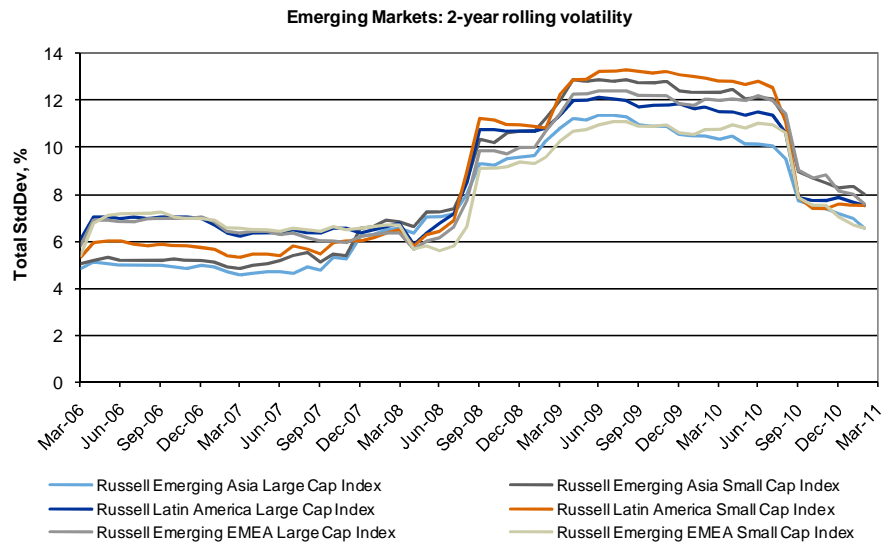
Developed markets have had high, steady correlations to the U.S. broad markets since the market meltdown of 2008. After two years of elevated correlations, developed markets are beginning to move more independently, as seen in the decreased correlations illustrated in Figure 5. Following the natural and nuclear disasters in Japan in early March, developed Pacific Basin experienced market losses greater than those of other non-U.S. developed regions, causing its correlation to the U.S. broad market to decrease further.

Figure 5



In June 2010, volatility began to drop significantly among emerging markets. Despite the political turmoil in the Middle East, we do not see an increase in volatility measured by the large and small cap Asia and EMEA regions in Figure 8.

Figure 8



Alpha potential in global markets

Investment portfolios may benefit from diversification across asset classes, markets and risk factors. Investment performance may also be improved with the value added by skilled active management. “The fundamental law of active management,” as defined by Grinold and Kahn,⁵ states that the contribution from active management is a function of manager skill and market breadth – the size of the active opportunity set. Cross-sectional volatility (CrossVol) is a good measure of market breadth within a universe of securities and thus of alpha potential in different markets. In this section, we examine market breadth in global equity markets based on the Russell-Parametric CrossVol Indexes over the 12-month period 4/30/2010 to 3/31/2011, and compare recent experience to historical norms.⁶ This research offers insight as to where skilled active management has had the greatest opportunity to add value and to improve investment performance.

Generally, we find that over the recent 12-month period:

- The U.S. large cap market (based on the Russell 1000 Index) has offered the lowest level of alpha opportunity, while the U.S. small cap market (based on the Russell 2000 Index) has offered the highest level of alpha opportunity of all markets examined.
- Emerging markets have offered the greatest alpha opportunities when compared across regions, styles and cap tiers, with the one exception of U.S. small cap.
- Small cap markets have had higher levels of CrossVol than large cap markets.
- Growth and value sectors have had similar levels of CrossVol.

A comparison of the recent period to historic median levels and extremes reveals:

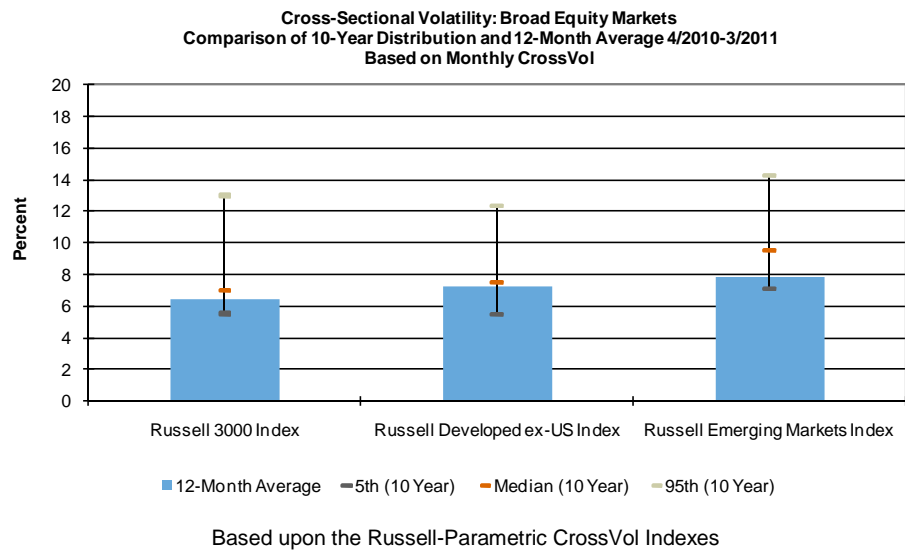
- CrossVol recent average levels in emerging markets were notably lower than historic medians.
- Recent CrossVol levels approached historic medians only in non-U.S. developed markets.
- Small cap and emerging markets have offered the greatest alpha potential, both historically and recently.

⁵ Grinold, R., and R. Kahn (2000). *Active Portfolio Management*, 2nd Edition. New York: McGraw-Hill.

⁶ Throughout this report, we use Russell-Parametric CrossVol Indexes to measure the alpha potential of global equity markets

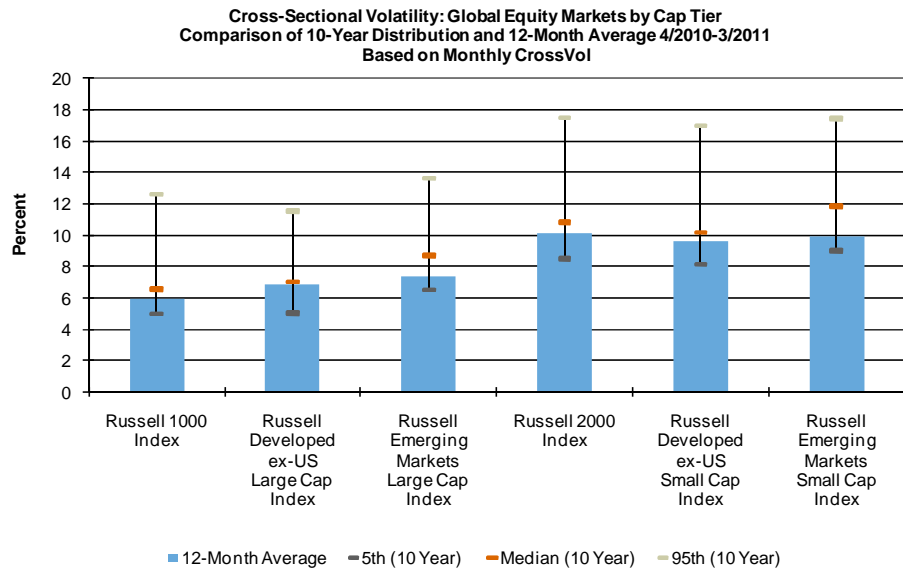
Alpha potential in broad equity markets: Figure 9 compares the levels of CrossVol over the last 12 months to the 10-year distribution for broad equity markets. Lower CrossVol generally indicates fewer opportunities for active managers to provide differentiated returns from the overall market or index. We see that during both the recent 12-month period and the longer history, alpha potential has been highest in emerging markets, and lowest in the U.S. The recent level of market breadth in emerging markets, however, is below the 10-year median level; indeed, it is only in non-U.S. developed markets that current CrossVol levels (measured by the average over the last 12 months) are close to historic median levels. Based on both recent averages and historical norms, alpha potential is lowest in the U.S.

Figure 9 / Broad equity markets / data as of 3/31/2011



Alpha potential in global large and small cap markets: In Figure 10 we examine the relationship between cap tiers in global equity markets and alpha potential. We note that the markets which offered both the greatest and the least potential for active management over the last 12 months are found in the U.S.: CrossVol is lowest in U.S. large cap and highest in U.S. small cap. Over the longer history, the position of U.S. large cap is consistent with recent experience: of all six markets examined here, U.S. large cap has the lowest average/median CrossVol levels, both recent and historical. Historically, median CrossVol has been highest in small cap emerging markets, but we see that during the recent period, alpha opportunity in emerging small cap has been far below the 10-year norm. As we saw in our examination of broad market alpha opportunities, it is only in developed ex-U.S. markets; in fact only in the large cap portions of those markets, that the recent CrossVol averages approach the historic median. Finally, we note that CrossVol levels, both recent and historic, have been higher in small cap than in large cap markets.

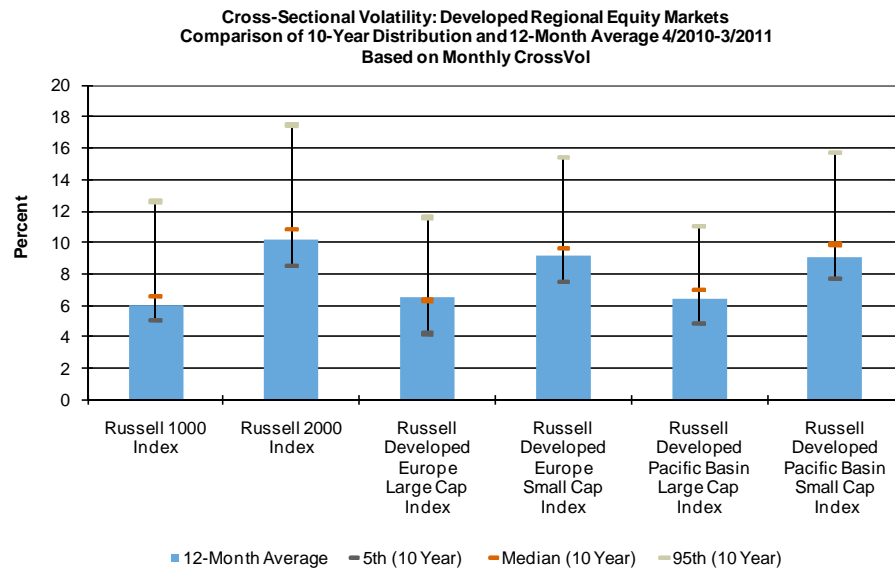
Figure 10 / Global large and small cap markets / data as of 3/31/2011



Based upon the Russell-Parametric CrossVol Indexes

Alpha potential in regional developed markets: When comparing market breadth across developed markets, as in Figure 11, we note again that alpha potential has been greater in small cap vs. large cap market sectors. We see this relationship in all developed regions: U.S., developed Europe and developed Pac Basin. This is true for the 10-year historical medians as well as for the averages over our focus period (the last 12 months). In large cap developed markets, CrossVol is and historically has been higher in the Pac Basin market. We see again that the U.S. large cap market (based on the Russell 1000 Index) has offered the smallest active opportunity set of the markets under examination. However, in small cap space we see that the U.S. small cap market (based on the Russell 2000) has greater breadth, both historically and over the current period, than either of the other two developed small cap markets. Of all these markets, however, only developed Europe large cap has experienced a level of market breadth over our focus period that is comparable to historic norms.

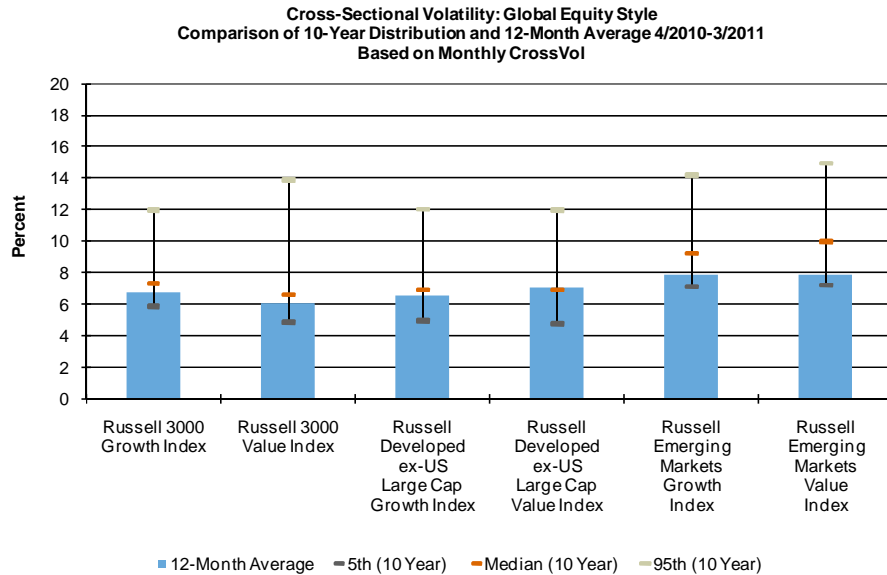
Figure 11 / Regional developed markets / data as of 3/31/2011



Based upon the Russell-Parametric CrossVol Indexes

Alpha potential in global growth and value sectors: Recent experience and our 10-year history of the distribution of CrossVol levels in growth and value sectors indicate that growth and value sectors in a given market offer fairly similar opportunities for active management. In Figure 12, we see that in emerging markets, market breadth over the recent period has been equal across style sectors, although historic medians indicate that over the long term, opportunity has been slightly greater in value. We also see again that 12-month CrossVol averages in emerging markets are far below historic medians. In the U.S. both recently on average and historically at the median, CrossVol levels in growth have been slightly higher than in value, although value has historically experienced the most extreme highs and lows. In developed ex-U.S. markets, growth and value CrossVol historic distributions – medians and extremes – are almost identical; over the last 12 months, however, opportunities in value have been slightly greater than in growth. It is again only in non-U.S. developed markets that recent CrossVol levels are close to historic medians.

Figure 12 / Global growth and value markets / data as of 3/31/2011



Based upon the Russell-Parametric CrossVol Indexes

Putting it all together: diversification, risk and alpha potential

Which major equity markets have offered the best combination of high diversification, low volatility and high alpha potential over the last 12 months? We measure this by ranking 21 different markets (developed and emerging; large and small cap; growth and value) in each of the three categories: diversification, risk and alpha potential. Markets higher in CrossVol received a higher ranking (more desirable); markets lower in correlation and volatility also received a higher ranking (also more desirable). We then took the average of all three rankings for each market. The higher the number, the more attractive a market is on average across all three characteristics. Table 1 displays the results of this analysis: the developed Pacific Basin region – especially the small cap sector of the region’s markets – offered the best combination across all markets examined during this period. Emerging Asia and broad non-U.S. developed markets also appear to have offered a more attractive combination across our three characteristics than have the U.S. or developed Europe.

Table 1/ Data as of 3/31/2011: average ranking of 21 major markets across the three dimensions of diversification, risk and alpha potential*

Russell Developed Pacific Basin Small Cap Index	19.67
Russell Developed Pacific Basin Large Cap Index	16.00
Russell Developed ex-US Small Cap Index	15.33
Russell Emerging Asia Large Cap Index	15.00
Russell Emerging Asia Small Cap Index	14.00
Russell Developed ex-US Large Cap Index	11.67
Russell Developed ex-US Index	11.33
Russell Emerging Markets Index	11.33
Russell Emerging Markets Large Cap Index	11.33
Russell Emerging Markets Small Cap Index	11.00
Russell Developed Europe Small Cap Index	11.00
Russell Global ex-US Small Cap Index	10.33
Russell Global Small Cap Index	10.00
Russell 3000 Index	9.33
Russell Global ex-US Index	8.67
Russell 1000 Index	8.33
Russell Developed Europe Large Cap Index	8.00
Russell Global ex-US Large Cap Index	8.00
Russell 2000 Index	7.67
Russell Global Large Cap Index	7.33
Russell Developed Europe	5.67

* Diversification measured by trailing 24-month correlation with the U.S. broad market (Russell 3000 Index); risk measured as the standard deviation of 24-month returns; and alpha potential measured as the 3-month average of monthly cross-sectional volatility within markets; all data as of 3/31/2011.

Conclusion

During the 12-month period ending March 31, 2011, global equity markets have experienced declining correlations to the U.S. equity market (as represented by the Russell U.S. 3000 Index), as well as reduced levels of returns volatility. For the U.S.-based investor, this is good news; it indicates that diversification benefits from investing in global equity markets have increased while overall levels of risk have declined. We note, however, that correlation and volatility levels are currently still higher than they were prior to the global financial crisis and recession. In line with our observations from 2009 and 2010, we see that emerging and small cap markets exhibit lower correlations with the broad U.S. equity market but have also experienced higher levels of volatility relative to developed large cap markets. In terms of alpha potential, we observe that with one exception, i.e., developed ex-U.S. large cap markets, primarily European, current levels of cross-sectional volatility are lower than historical medians in all markets under review. We also see that, in general, emerging and small cap markets have offered greater alpha opportunities for skilled managers to exploit.

Appendix

Asset Class	Category	Cap Tier	Style	Index
U.S. Large Cap	Developed	Large	Broad	Russell 1000 [®] Index
U.S. Large Cap Growth	Developed	Large	Growth	Russell 1000 [®] Growth Index
U.S. Large Cap Value	Developed	Large	Value	Russell 1000 [®] Value Index
U.S. Small Cap	Developed	Small	Broad	Russell 2000 [®] Index
U.S. Small Cap Growth	Developed	Small	Growth	Russell 2000 [®] Growth Index
U.S. Small Cap Value	Developed	Small	Value	Russell 2000 [®] Value Index
U.S. All Cap	Developed	Broad	Broad	Russell 3000 [®] Index
Developed Europe Large Cap	Developed	Large	Broad	Russell Developed Europe Large Cap Index
Developed Europe Small Cap	Developed	Small	Broad	Russell Developed Europe Small Cap Index
Developed Global ex-U.S. All Cap	Developed	Broad	Broad	Russell Developed ex-US Index
Developed Global ex-U.S. Large Cap	Developed	Large	Broad	Russell Developed ex-US Large Cap Index
Developed Global ex-U.S. Small Cap	Developed	Small	Broad	Russell Developed ex-US Small Cap Index
Developed Global ex-U.S. Large Cap Growth	Developed	Large	Growth	Russell Developed ex-US Large Cap Growth Index
Developed Global ex-U.S. Large Cap Value	Developed	Large	Value	Russell Developed ex-US Large Cap Value Index
Developed Global ex-U.S. Small Cap Growth	Developed	Small	Growth	Russell Developed ex-US Small Cap Growth Index
Developed Global ex-U.S. Small Cap Value	Developed	Small	Value	Russell Developed ex-US Small Cap Value Index
Developed Pacific Basin Large Cap	Developed	Large	Broad	Russell Developed Pacific Basin Large Cap Index
Developed Pacific Basin Small Cap	Developed	Small	Broad	Russell Developed Pacific Basin Small Cap Index
Emerging Asia Large Cap	Emerging	Large	Broad	Russell Emerging Asia Large Cap Index
Emerging Asia Small Cap	Emerging	Small	Broad	Russell Emerging Asia Small Cap Index
Emerging EMEA Large Cap	Emerging	Large	Broad	Russell Emerging EMEA Large Cap Index
Emerging EMEA Small Cap	Emerging	Small	Broad	Russell Emerging EMEA Small Cap Index
Emerging Markets	Emerging	Broad	Broad	Russell Emerging Markets Index
Emerging Large Cap	Emerging	Large	Broad	Russell Emerging Markets Large Cap Index
Emerging Small Cap	Emerging	Small	Broad	Russell Emerging Markets Small Cap Index
Emerging Large Cap Growth	Emerging	Large	Growth	Russell Emerging Markets Large Cap Growth Index
Emerging Large Cap Value	Emerging	Large	Value	Russell Emerging Markets Large Cap Value Index
Emerging Small Cap Growth	Emerging	Small	Growth	Russell Emerging Markets Small Cap Growth Index
Emerging Small Cap Value	Emerging	Small	Value	Russell Emerging Markets Small Cap Value Index
Latin America Large Cap	Emerging	Large	Broad	Russell Latin America Large Cap Index
Latin America Small Cap	Emerging	Small	Broad	Russell Latin America Small Cap Index

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Disclosures

"Small capitalization (small cap) investments involve stocks of companies with smaller levels of market capitalization (generally less than \$2 billion) than larger company stocks (large cap). Small cap investments are subject to considerable price fluctuations and are more volatile than large company stocks. Investors should consider the additional risks involved in small cap investments.

Non-U.S. markets entail different risks than those typically associated with U.S. markets, including currency fluctuations, political and economic instability, accounting changes and foreign taxation. Securities may be less liquid and more volatile.

Diversification does not assure a profit and does not protect against loss in declining markets.

"Standard deviation" is a statistical measure of the degree to which an individual value in a probability distribution tends to vary from the mean of the distribution. The greater the degree of dispersion, the greater the risk.

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