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# Equity Dispersion:

## Value Stocks Yet to be Rewarded

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January 2011

## **EXECUTIVE SUMMARY**

Rising correlations among returns across equity asset classes have contributed to the erosion of the potential benefits of diversification, especially over the last few years. The consequences for investors have been exacerbated by increased volatility, creating a sense that there has been “nowhere to go” for protection from equity market swings.

Rising correlations also have been evident among the sectors within those equity markets.

Correlation measures the degree to which asset classes move in sync; it does not measure the *magnitude* of that movement. Historically, even when correlations across equity asset classes were high (i.e., they all were moving in similar directions concurrently), investors could find diversification benefits if the absolute range of returns across those classes were high. Recently, not only have correlations been high, but the range of returns across asset classes – and across sectors within those asset classes – has been narrow. This similarity in the magnitude of returns has resulted in a low level of “return gaps” or “dispersion” of returns and has further diminished potential diversification benefits. Please note that diversification does not assure a profit or protect against a loss in a declining market.

In this environment, the differences in returns *among investment managers* have been reduced.

Historically, periods of below-average return dispersion have not lasted long. This has been true across equity asset classes and among global and U.S. sectors. However, the current environment is the first period over the last 20 years marked by the simultaneous occurrence of high correlation and low return dispersion across managers, asset classes, and sectors.

While return dispersion is low, dispersion of *valuations* remains relatively wide by historical standards. Active managers have performed better when markets have transitioned from periods of low return dispersion to higher. Furthermore, there has been a strong relationship between valuation spreads and subsequent outperformance of value stocks (relative to glamour stocks).

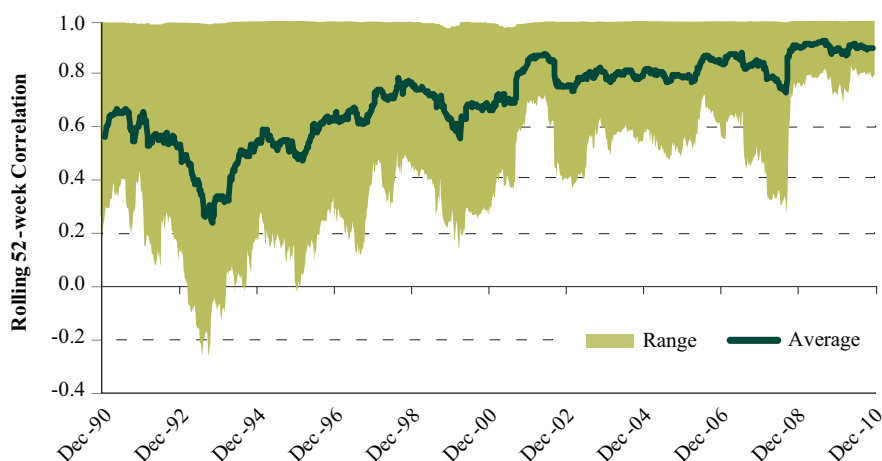
In summary, valuation discrepancies across equities are not being recognized, creating a fertile environment for value-based stock pickers. When return dispersion broadens or returns to more normal levels, these undervalued securities may outperform the broad market.

## Correlations Across and Within Equity Asset Classes

Rising correlations and low return dispersion across equity asset classes have contributed to the erosion of the potential benefits of diversification, especially over the last few years. While the potential benefits of diversification are discussed throughout this paper, please note that diversification does not assure a profit or protect against a loss in a declining market. Turmoil from the financial crisis in 2008, the growing popularity of exchange-traded funds (“ETFs”), and other passive strategies were the principal drivers in this most recent cyclical uptick.

Exhibit 1 shows the average correlation across pairs of equity asset classes – and the extremes in the range of pairings. Correlations were calculated using rolling, 52-week returns, represented by various indices. We compared 15 diverse equity asset classes by pairing each index with the other 14 (for a total of 105 pairings) and calculating paired correlations. Then we took the average and range of all paired correlations. On December 31, 2010, for example, the average correlation across all pairs was 0.90. The highest correlation was 0.99 (between the Russell 2000 Index and the Russell 2000 Value Index); the lowest correlation was 0.79 (between the Russell 2000 Value Index and the S&P Emerging Markets Index.) For a complete list of indices used during which periods, please see the Endnotes.

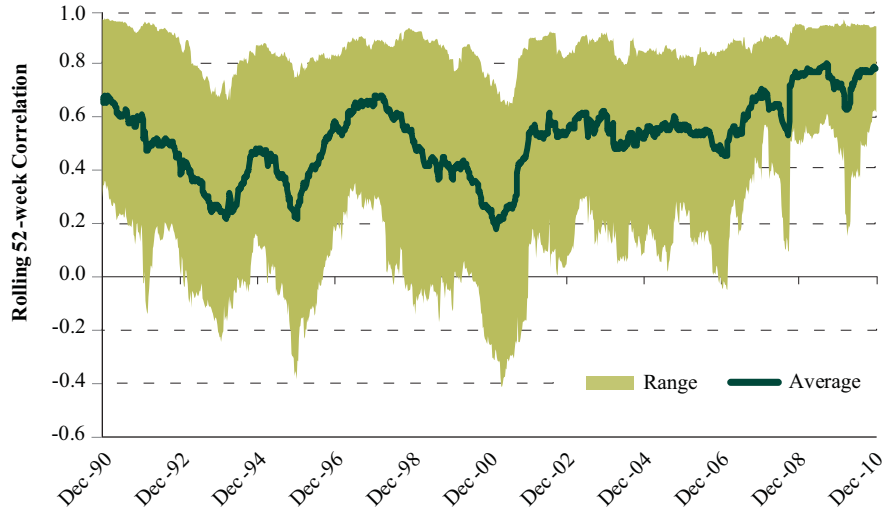
**Exhibit 1: Average and Range of Cross-Equity Asset Class Correlations (1990-2010)**



Source: FactSet, as of 12/31/2010. Past performance is not a guarantee of future results. Rolling periods represent a series of overlapping, smaller time periods within a single, longer-term time period. For example, over a 20-year period, there is one 20-year rolling period, eleven 10-year rolling periods, sixteen 5-year rolling periods, and so forth.

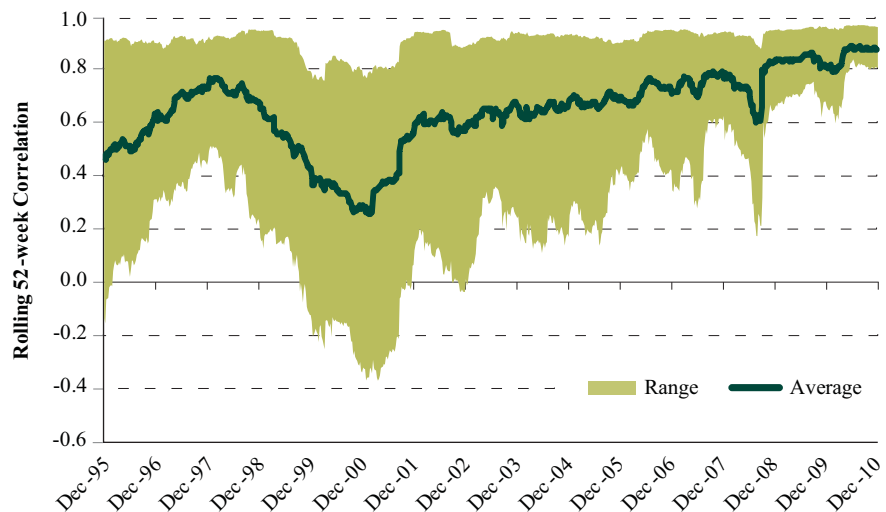
We also used the same methodology described above to analyze correlations across 10 large-cap sectors in the United States (using the S&P 500 Index) and globally (using the S&P Global LargeMid Cap Index). Availability of weekly pricing for each index’s sectors begins in 1990 and in 1995, respectively. As was evident at the asset class level, correlations *within* equity asset classes have risen through the past decade, most steadily in the case of global sector correlations. See Exhibits 2 and 3 on the following page.

**Exhibit 2: Cross-Sector Correlations in the United States**  
 Average and Range of Correlation Across 10, Large-Cap Sectors,  
 Each Paired Against One Another



Source: FactSet, as of 12/31/2010. Past performance is not a guarantee of future results. Rolling periods represent a series of overlapping, smaller time periods within a single, longer-term time period. For example, over a 20-year period, there is one 20-year rolling period, eleven 10-year rolling periods, sixteen 5-year rolling periods, and so forth.

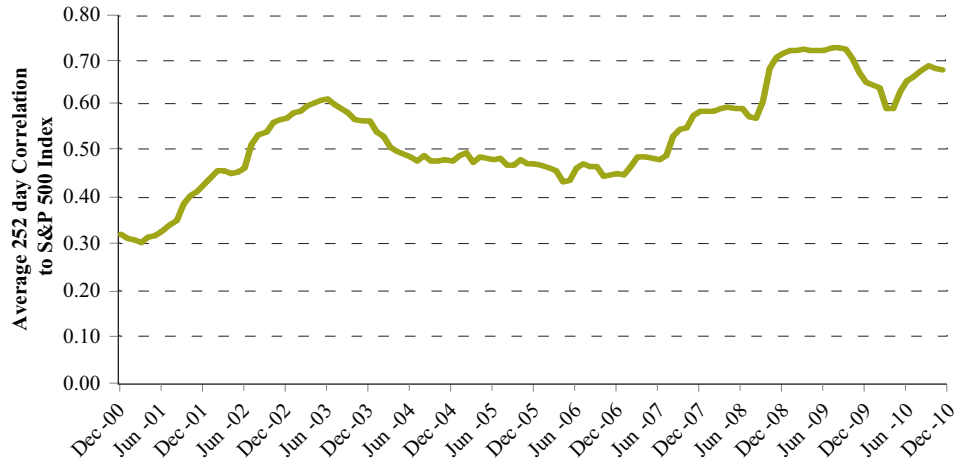
**Exhibit 3: Cross-Sector Correlations Globally**  
 Average and Range of Correlation Across 10, Large-Cap Sectors,  
 Each Paired Against One Another



Source: FactSet, as of 12/31/2010. Past performance is not a guarantee of future results. Rolling periods represent a series of overlapping, smaller time periods within a single, longer-term time period. For example, over a 20-year period, there is one 20-year rolling period, eleven 10-year rolling periods, sixteen 5-year rolling periods, and so forth.

Rises in asset class and sector correlations paralleled similar trends at the micro level: individual stocks. Correlations of constituents of the S&P 500 Index to the aggregate Index itself steadily rose through the last decade and remained high through 2010. See Exhibit 4.

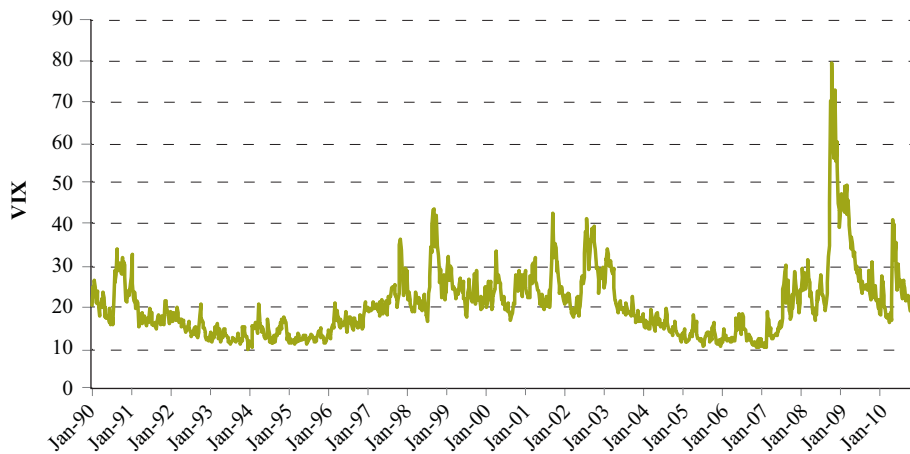
**Exhibit 4: Correlation of S&P 500 Index Constituents to the Index**



Source: S&P via FactSet, as of 12/31/2010. Past performance is not a guarantee of future results.

Eroding diversification benefits for investors have been exacerbated by increased volatility, creating a sense that there has been “nowhere to go” for protection from equity market swings. Exhibit 5 shows the CBOE Volatility Index® or VIX®. The VIX is a measure of market expectations of near-term volatility conveyed by S&P 500 stock index option prices. Note the recent spikes in volatility.

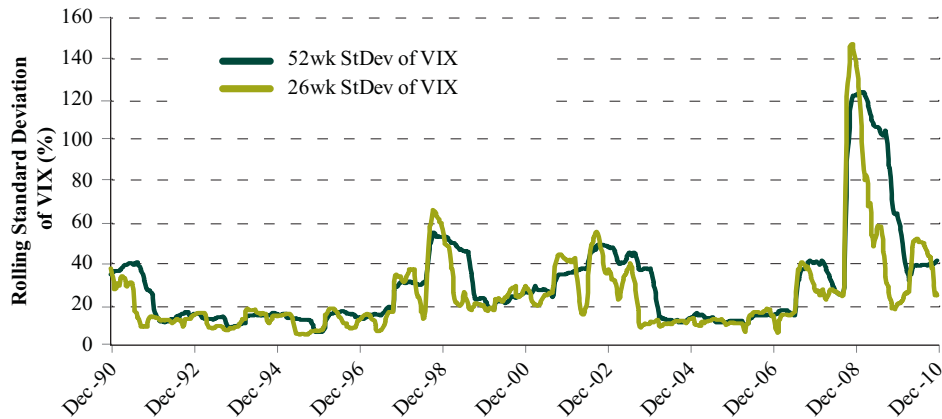
**Exhibit 5: Volatility in the U.S. Stock Market**



Source: FactSet, as of 12/31/2010. Past performance is not a guarantee of future results.

We also measured the standard deviation of the VIX using rolling 26- and 52-week periods to gauge how “schizophrenic” the U.S. market has been behaving. As shown in Exhibit 6, this measure’s recent spikes remain above its historical average, suggesting that periods of volatility for U.S. stocks have come in bursts. In 2010, bouts of volatility may have reflected investors’ preoccupation with broader macroeconomic issues such as fears of inflation/deflation, GDP forecasts and revisions, government policy and regulation, and unfolding sovereign debt issues.

**Exhibit 6: Volatility of Volatility**



Source: FactSet, as of 12/31/2010. Past performance is not a guarantee of future results. Rolling periods represent a series of overlapping, smaller time periods within a single, longer-term time period. For example, over a 20-year period, there is one 20-year rolling period, eleven 10-year rolling periods, sixteen 5-year rolling periods, and so forth.

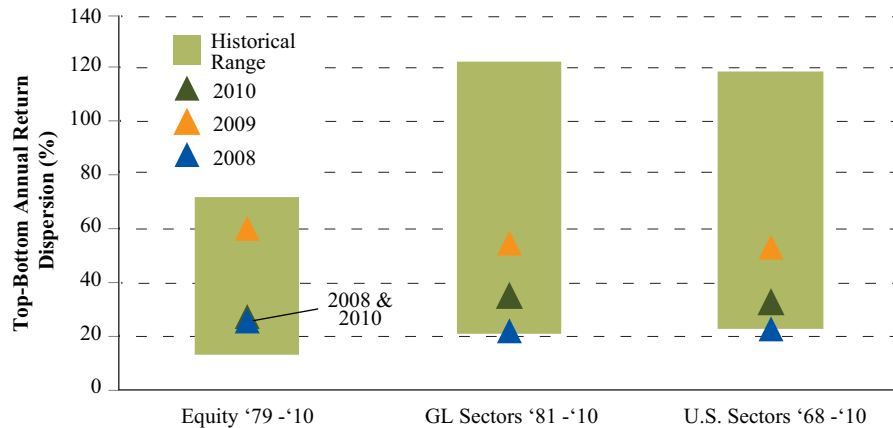
## Return Dispersion

Correlation measures whether asset classes move in sync; it does not measure the *magnitude* of that co-movement. Historically, even when correlations across equity asset classes were high (i.e., they all were moving in similar directions concurrently), investors could find diversification benefits if the dispersion of returns (or the “return gaps<sup>i</sup>”) across those classes were high. Exhibit 7 shows the historical range<sup>ii</sup> of return dispersion for equity asset classes, as well as global and U.S. sectors.

<sup>i</sup> Statman, M., Scheid, J. “Correlation, Return Gaps, and the Benefits of Diversification”. *The Journal of Portfolio Management*. Spring 2008.

<sup>ii</sup> Between 1979 and 1985, we used 10 asset classes; between 1986 and 1987, we used 12; between 1988 and 1989, 13, between 1989 and 1991, 14 and between 1992 and the present, 15.

## Exhibit 7: Range of Top- and Bottom-Performing Asset Classes and Sectors

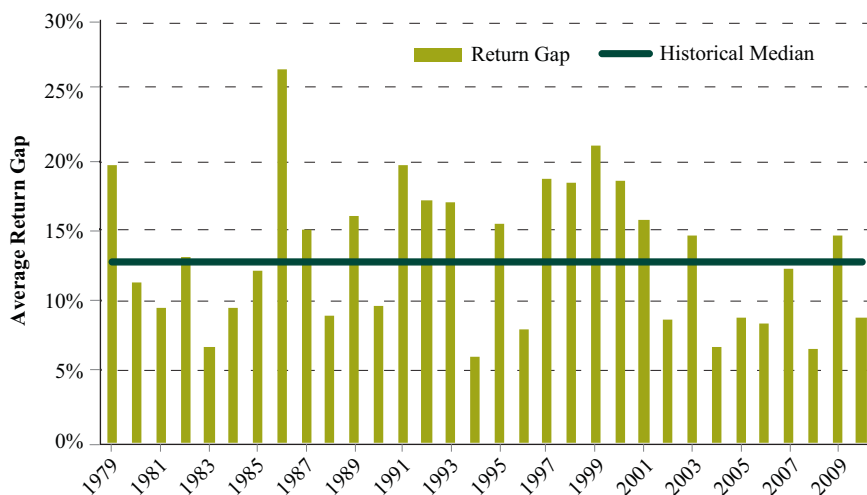


Source: FactSet, as of 12/31/2010. Past performance is not a guarantee of future results.

While correlations rose in 2008 and 2009 during the financial crisis, there were significant differences in returns across equity markets, creating opportunities to realize diversification benefits. For example, the Russell 2000 Value Index fell 29% in 2008, but the MSCI Emerging Markets Index fell 53%. In 2009, the MSCI Emerging Markets Index gained 79%, but stocks in the Russell 1000 Value Index were up 20%. Within those asset classes, however, dispersion was not as prominent. In 2008, the differences between the best- and worst-performing asset classes and sectors of the market hit all-time lows, only reverting to more typical levels in 2009. In 2010, as correlations remained high, the range of returns across asset classes – and across sectors within those asset classes – was once again low, diminishing the potential to capture diversification benefits.

We studied historical average return gaps across paired asset classes to see how 2010 compared to prior years. Exhibit 8 shows our findings. (Again, we replicated the “paired asset class” methodology described previously to generate an average return gap for each year going back to 1979. Due to limits on availability of historical data, we used fewer asset classes during the early years of the study and more asset classes as data became available. See the Endnotes for additional information.)

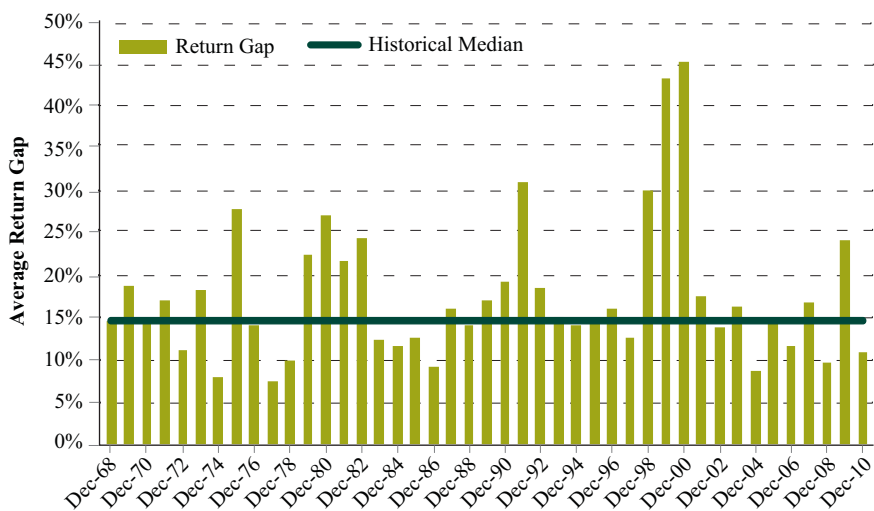
### Exhibit 8: Return Gap or Average Difference in Calendar Year Returns Across 15 Equity Asset Classes



Source: FactSet, as of 12/31/2010. Past performance is not a guarantee of future results.

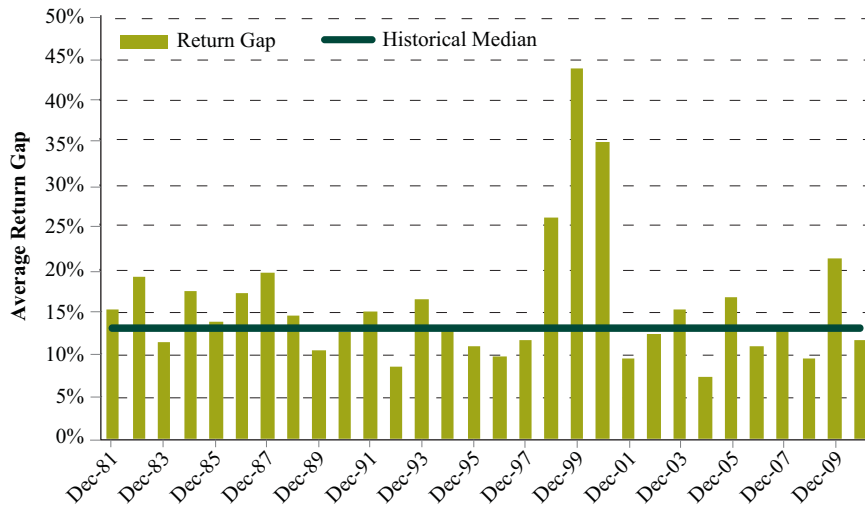
We also studied historical return gaps across 10 sectors within the large-cap segments of the U.S. and global equity markets. Our universe of study was the largest 15% of companies by market cap reconstituted annually (whether U.S. or globally), and a sector’s return was defined as the median return among stocks within that sector during the following calendar year. See Exhibits 9 and 10. The return gaps in the United States and globally in 2010 were among the lowest historically on a calendar year basis. Further, much of the 2010 return gap only surfaced in the last two months of the year, before which YTD return gaps stood at all-time lows. The average return gap in U.S. and global sector returns was narrower at 5.7% and 7.7% as of 10/31/10, respectively.

### Exhibit 9: Return Gap or Average Difference in Calendar Year Returns 10 Large-Cap U.S. Equity Sectors



Source: Compustat via FactSet, as of 12/31/2010. Past performance is not a guarantee of future results.

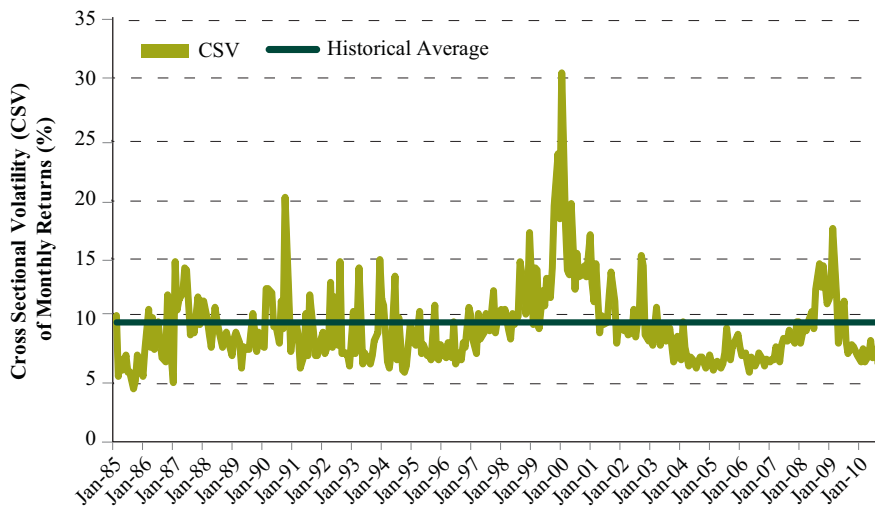
**Exhibit 10: Return Gap or Average Difference in Calendar Year Returns Across 10 Large-Cap Global Equity Sectors**



Source: Worldscope via FactSet, as of 12/31/2010. Past performance is not a guarantee of future results.

For much of 2010 investors experienced unprecedented lows in return gaps, coinciding with lower-than-median cross sectional volatility (“CSV”) among global large-cap stocks. CSV measures the variability in returns across a spectrum of stocks. If CSV is low, the difference between the best-performing stocks and the worst will be relatively narrow. All else being equal, an environment of low CSV gives investment managers less opportunity to “get it right” and deliver alpha (or get it wrong). Exhibit 11 shows cross-sectional standard deviation of monthly returns for the largest 15% of global stocks by market capitalization. As of October 31, 2010, this represented 1,465 securities.

**Exhibit 11: Historical Global Cross-Sectional Volatility of Monthly Returns**

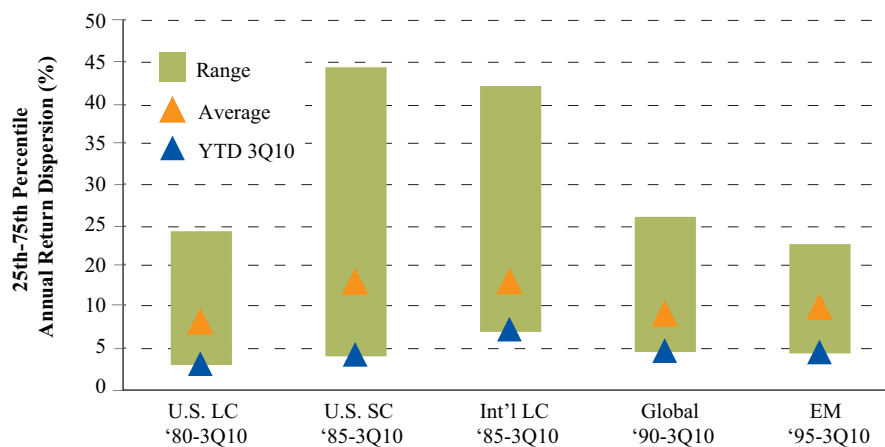


Source: Worldscope via FactSet, as of 12/31/2010. Past performance is not a guarantee of future results.

## Return Dispersion Issues Now and in the Future

Recently, in an environment of high correlations and low return dispersion, returns for active managers have mirrored respective benchmarks. Outperformance (and underperformance) potential has been limited. Exhibit 12 illustrates the historical average and range of the difference in calendar-year returns between the 75th percentile manager (bottom quartile) and the 25th percentile manager (top quartile) in various equity mandates. Also shown is the difference between the bottom- and top-quartile managers in 2010. Note that the differences in manager returns through 9/30/2010<sup>iii</sup> were at their lowest levels in all equity mandates.

**Exhibit 12: Range of Manager Returns and Difference Between 25th and 75th Percentile by Asset Class**



Source: PSN Manager Database via FactSet, as of 9/30/2010. See endnotes for manager universe information. Past performance is not a guarantee of future results.

So what can investors expect in the future? The dispersion factors highlighted in this article thus far (across equity asset classes, across U.S. and global sectors, and among managers) reveal the first time each has been reflecting low return dispersion concurrently. Historically, these factors tended to be mixed.

Looking back to Exhibits 8, 9, and 10, past periods of lower-than-median return gaps have tended to last only a short while. Focusing on the U.S. record (as it contains the lengthiest record for analysis), the low established in 1977 in U.S. sector return gaps lasted two years, before reverting to higher levels. All other periods in which return gaps dipped below the 10% level quickly rose to higher levels the following year. Globally, similar reversals were evident following any cyclical low in the time series. Overall, there has been little to no historical relationship in year-over-year changes in return gaps.

With respect to correlations, we could be witnessing a secular trend toward higher levels – with cyclical aspects. In 1997 and 1998, correlations increased amid the Asian and Russian currency crises, but subsequently declined. Potential drivers of a more recent cyclical trend bringing higher correlations might include a post-crisis mentality among investors and the influence of macroeconomic variables on short-term investment decisions.

<sup>iii</sup> Manager returns in the PSN Database are typically updated six weeks after quarter-end, so data through 2010 year-end was not available at time of publication.

Factors that may reflect a more secular trend toward higher correlations include increased globalization and the interrelationship among markets, more sophisticated market participants using increasingly sophisticated technology, and the rise in assets invested using passive strategies such as index investing and ETFs. JPMorgan Chase estimates that futures and ETFs are as large as 140% of total cash equity volumes, a stunning rise from the 30-50% level these passive investments totaled five to seven years ago.<sup>iv</sup>

Between 1990 and 2010, active managers generally performed better during periods of higher-than-normal return dispersion, although the range of active returns was commensurately wider. This has important ramifications as investors weigh rebalancing decisions and active/passive allocations given 2008 and most of 2010 were periods of uncharacteristically low return dispersion. With little historical grounding to support a thesis for a long bout of low return dispersion coupled by rapidly widening return gaps the final two months of 2010, markets may be positioned at an inflection point.

We analyzed manager performance in periods of above/below “normal” return dispersion in the United States and globally. “Normal” was defined as the historical median return gap shown previously in Exhibits 9 and 10 for those respective markets. Exhibit 13 shows excess returns for managers across various asset classes at the 25th, 50th, and 75th percentiles during above- and below-normal return dispersion years. During above-normal years, top-quartile managers delivered better returns than top-quartile managers in below-normal years. The range of returns from top- to bottom-quartile managers also was larger during above-normal dispersion years, reflecting greater opportunity for outperformance, and, of course, underperformance, as well.

**Exhibit 13: Manager Excess Returns by Percentile During Periods of Above Normal Return Gaps vs. Below**

Excess Return	U.S. LC ('80- 3Q10)			U.S. SC ('85-3Q10)			Int'l ('85-3Q10)			Global ('90-3Q10)			EM ('95-3Q10)		
	25	50	75	25	50	75	25	50	75	25	50	75	25	50	75
By Percentile in Peer Universe															
Above	7.41	2.04	(3.55)	15.44	5.30	(2.64)	10.39	1.30	(7.08)	10.40	2.85	(2.20)	7.26	1.61	(5.09)
Below	3.36	0.36	(3.09)	6.88	2.37	(3.27)	10.13	4.17	(1.13)	7.23	2.90	(0.66)	8.47	3.56	(0.85)

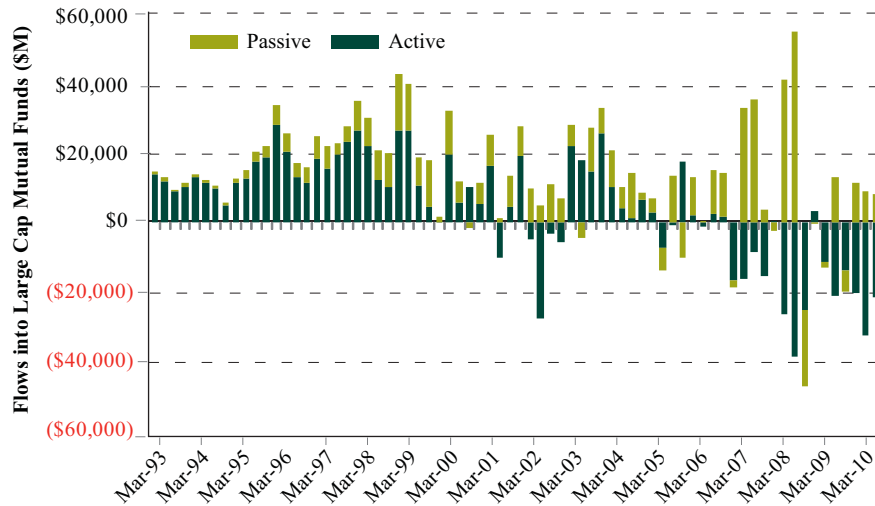
Source: Worldscope, Compustat, PSN Manager Database via FactSet, as of 9/30/10. See endnotes for a listing of above and below normal years. Past performance is not a guarantee of future results.

## Undervalued Stocks Have Yet to Be Rewarded

As noted, passive investment strategies are one of the factors driving correlations higher and return dispersion lower; they also are creating attractive valuations. Exhibit 14 shows escalating flows to passive strategies in recent years and flows *out* of active strategies since 2006. Exhibit 15 shows the declining ratio of assets under management (“AUM”) in active, large-cap U.S. mutual fund strategies relative to passive strategies since 1993. While not shown, active non-U.S. strategies have shown similar patterns (although flows out of active strategies were less significant recently).

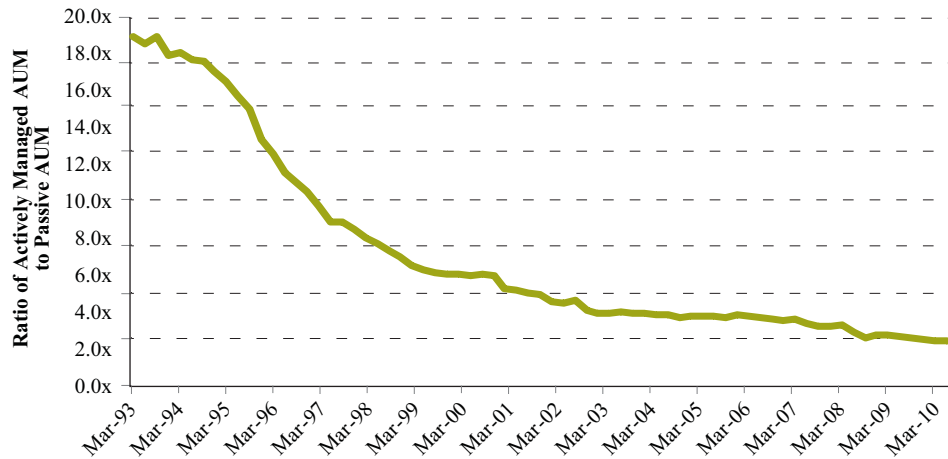
<sup>iv</sup> JPMorgan. “Why we have a Correlation Bubble.” Global Equity Derivatives & Delta One Strategy. October 5, 2010.

**Exhibit 14: Quarterly Flows into Active and Passive U.S. Large-Cap Equity Strategies (1993-2010)**



Source: Morningstar, as of 12/31/10. Includes blend, value, and growth funds. Passive includes passive funds and ETFs.

**Exhibit 15: Ratio of AUM in Active and Passive U.S. Large-Cap Equity Strategies (1993-2010)**

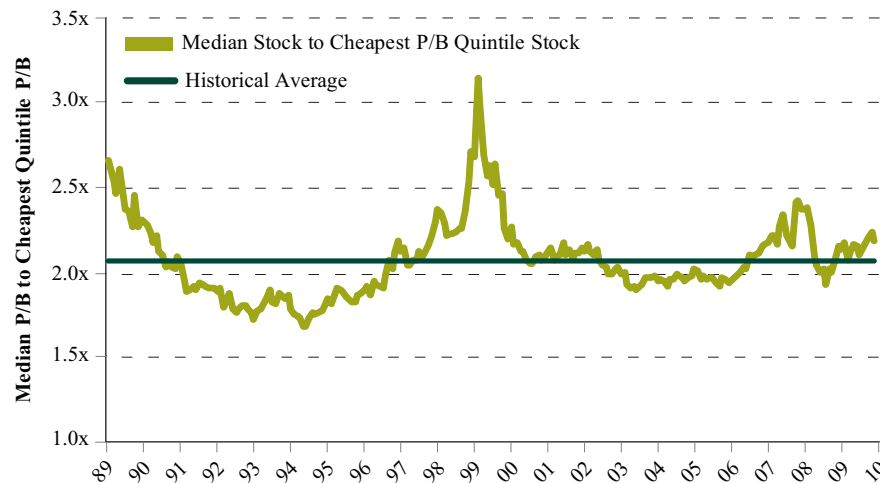


Source: Morningstar, as of 12/31/10. Includes blend, value, and growth funds. Passive includes passive funds and ETFs.

The vast majority of indices that passive strategies seek to mirror are capitalization weighted. Thus, money invested in index funds shows no regard for fundamentals; it funnels into higher-capitalization stocks, pushing their multiples higher – and widening the range of valuations across all stocks.

So while dispersion among returns across and within equity asset classes has been low, one measure of dispersion remains relatively high by historical standards – valuations. The Brandes Institute previously reported a strong relationship between high valuation dispersion and subsequent outperformance of value stocks (relative to glamour stocks)<sup>v</sup>. At year-end 2010, the median global stock traded at 2.2x the P/B multiple of the cheapest quintile. As shown in Exhibit 16, that was above the historical average since 1990. While not shown here, the valuation dispersion for U.S. stocks at year-end 2010 was comparable.

**Exhibit 16: Median Global Stock P/B vs. Cheapest Quintile Stock P/B (1990-2010)**

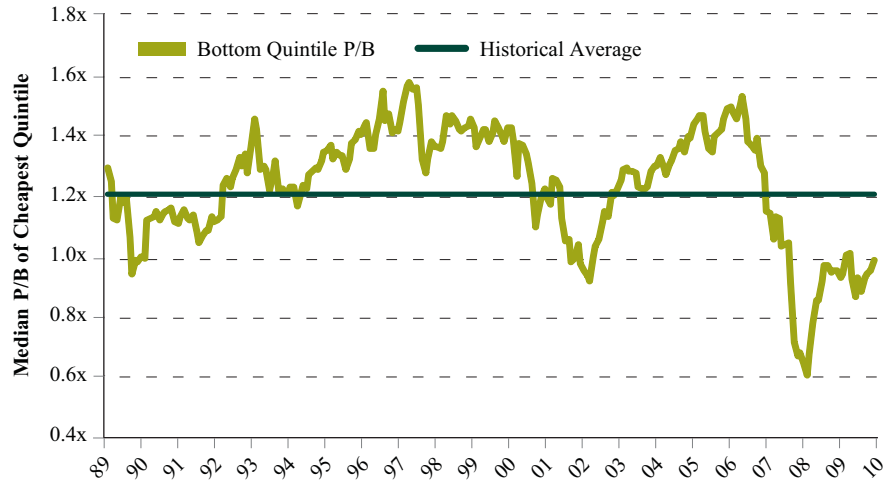


Source: Worldscope via FactSet, The Brandes Institute; as of 12/31/10. Past performance is not a guarantee of future results.

Recent high dispersion in valuations has not been caused by exceptionally high valuation levels for the median stock (as was the case in 1999/2000). The current attractive valuation dispersion stems from the cheapest quintile price-to-book (“P/B”) stocks being cheaper than their historical average, suggesting investors may be overlooking the attractiveness of undervalued stocks. As shown in Exhibit 17, despite global markets’ strong rebound since 2009, the cheapest quintile stock remained more than 20% below normal at year-end 2010. Though not shown, price to cash flow (“P/CF”) and price to earnings (“P/E”) measures indicated a similar 10-15% discount to normal levels.

<sup>v</sup> The Brandes Institute. “Value vs. Glamour Revisited: Historical P/B Ratio Disparities and Subsequent Value Stock Outperformance.” September 2009. [www.brandes.com/institute](http://www.brandes.com/institute).

### Exhibit 17: Cheapest Quintile Global Stock P/B and Historical Average (1990-2010)



Source: Worldscope via FactSet, The Brandes Institute; as of 12/31/10.  
Past performance is not a guarantee of future results.

Investors with actively managed mandates may be disappointed with performance over the past three years. As outlined above, the environment has not favored stock-pickers. At the same time, our analysis suggests return dispersion has not remained low for extended periods. Historically, valuations have experienced similarly quick reversals as well. When dispersion is higher, active managers have performed better as a group.

Investors willing to position their portfolios to take advantage of the potential for such reversals may be among the minority, but could be rewarded for their contrarian approach if and when the broader market recognizes currently undervalued opportunities. For active managers, and particularly those with a value discipline, the current environment remains fertile for finding attractive investment opportunities. If the environment returns to greater differentiation (i.e., higher return gaps), we believe such undervalued opportunities should stand to benefit.

## ENDNOTES

### Exhibit 1:

Based on the availability of weekly index pricing, 52-week correlations across 15 equity asset classes consist of the following indices and dates in which their respective correlation statistics entered the study:

#	Asset Class	Index	Start Date
1	US Large Cap Equity	S&P 500	1/1990
2	US Small Cap Equity	Russell 2000	1/1990
3	Non-US Equity	S&P Developed LargeMid Cap ex-United States	1/1990
4	Non-US Equity – Value	S&P Developed LargeMid Cap ex-United States Value	1/1990
5	Non-US Equity – Growth	S&P Developed LargeMid Cap ex-United States Growth	1/1990
6	Non-US Small Cap Equity	S&P Developed Small Cap ex-United States	1/1990
7	Emerging Markets	S&P Emerging Markets LargeMid Cap	1/1990
8	US Large Cap Equity – Value	Russell 1000 Value	1/1991
9	US Large Cap Equity – Growth	Russell 1000 Growth	1/1991
10	US Small Cap Equity – Value	Russell 2000 Value	6/1993
11	US Small Cap Equity – Growth	Russell 2000 Growth	6/1993
12	US Mid Cap Equity	Russell Mid Cap	6/1995
13	US Mid Cap Equity – Value	Russell Mid Cap Value	6/1995
14	US Mid Cap Equity – Growth	Russell Mid Cap Growth	6/1995
15	US Micro Cap	Dow Jones Wilshire Micro Cap	1/1999

### Exhibit 7 & Exhibit 8:

Based on the availability of long-term calendar year returns, the mix of indices is slightly different than Exhibit 1, as other indices offer greater historical data. As described earlier, we added index information on different equity asset classes as calendar year returns became available. Return dispersion statistics for 15 equity asset classes consist of the following indices and dates in which their respective calendar year returns entered the study:

#	Asset Class	Index	Start Date
1	US Large Cap Equity	S&P 500	1979
2	US Large Cap Equity – Value	Russell 1000 Value	1979
3	US Large Cap Equity – Growth	Russell 1000 Growth	1979
4	US Mid Cap Equity	Russell Mid Cap	1979
5	US Small Cap Equity	Russell 2000	1979
6	US Small Cap Equity – Value	Russell 2000 Value	1979
7	US Small Cap Equity – Growth	Russell 2000 Growth	1979
8	Non-US Equity	MSCI EAFE	1979
9	Non-US Equity – Value	MSCI EAFE Value	1979
10	Non-US Equity – Growth	MSCI EAFE Growth	1979
11	US Mid Cap Equity – Value	Russell Mid Cap Value	1986
12	US Mid Cap Equity – Growth	Russell Mid Cap Growth	1986
13	Emerging Markets	MSCI Emerging Markets	1988
14	Non-US Small Cap Equity	S&P Developed Small Cap ex-United States	1990
15	US Micro Cap	Dow Jones Wilshire Micro Cap	1992

**Exhibit 12:**

Manager classifications are from PSN. Returns from the following PSN manager universes were included in the study and only when such universes had sufficient observations for study:

Asset Class	Asset Class–Long Name	PSN Universes Included
US LC	US Large Cap Equity	US Large Cap Equity
US SC	US Small Cap Equity	US Small Cap Equity
INTL LC	Non-US Large Cap Equity	International All Cap, International Large Cap
Global	Global Large Cap Equity	Global Large Cap Equity, Global All Cap Equity
EM	Emerging Markets Equity	Emerging Markets

**Exhibit 13:**

Years above or below normal were defined relative to the historical median return gap for U.S. and global regions (see Exhibits 9 & 10). Periods to define the median return gap in the United States are from 1968-2010 and were applied to excess returns generated in above/below normal periods for U.S. Large Cap Equity (“US LC”) and U.S. Small Cap Equity (“US SC”) equity managers. The median return gap globally was measured over 1980-2010 and applied to excess returns generated in above/below normal periods for Global Large Cap Equity (“Global”), non-U.S. Large Cap Equity (“Int’l”), and Emerging Markets Equity (“EM”). Excess returns are from the PSN Manager Database as defined above in Exhibit 12. Years in which return gaps were above normal by region include:

	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
U.S.	X	X	X					X		X	X	X	X				X		X	X
Global	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		X		X					X	X
	00	01	02	03	04	05	06	07	08	09	10									
U.S.	X	X		X				X		X										
Global	X					X		X		X										

## **DISCLOSURES**

**The MSCI Emerging Markets Index (MSCI EM)** with gross dividends is an unmanaged, free float-adjusted market capitalization weighted index designed to measure equity market performance in emerging markets throughout the world. This index includes dividends and distributions, but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The MSCI EAFE (Europe, Australasia, Far East) Index** with net dividends is an unmanaged, free float-adjusted market capitalization weighted index designed to measure equity market performance of developed markets, excluding the United States and Canada. This index often is used as a benchmark for international equity portfolios and includes dividends and distributions net of withholding taxes, but does not reflect fees, brokerage commissions, or other expenses of investing.

**The MSCI Global Value and Growth Indices** cover the full range of developed, emerging and All Country MSCI Global Equity Indices across all size segmentations. MSCI uses a two dimensional framework for style segmentation in which value and growth securities are categorized using a multi-factor approach, which uses three variables to define the value investment style characteristics and five variables to define the growth investment style characteristics including forward looking variables. The objective of the index design is to divide constituents of an underlying MSCI Equity Index into respective value and growth indices, each targeting 50% of the free float adjusted market capitalization of the underlying market index.

**The S&P 500 Index** with gross dividends is an unmanaged, market capitalization weighted index that measures the equity performance of 500 leading companies in leading industries of the U.S. economy. Although the index focuses on the large cap segment of the market, with approximately 75% coverage of U.S. equities, it can also be a suitable proxy for the total market. This index includes dividends and distributions, but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing. The S&P Developed Ex-U.S. LargeMid Cap Index is an unmanaged, float-adjusted market capitalization weighted index that measures the equity performance of large capitalization companies from developed markets around the world, excluding the United States. This index includes the reinvestment of dividends and income but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The S&P Developed Ex-U.S. LargeMid Cap Value Index** is an unmanaged, float-adjusted market capitalization weighted index that measures the equity performance of large capitalization companies from developed markets around the world, excluding the United States. It includes those S&P Developed Ex-U.S. LargeMid Cap Index companies with lower price-to-book ratios and lower expected growth values. This index includes the reinvestment of dividends and income but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The S&P Developed Ex-U.S. LargeMid Cap Growth Index** is an unmanaged, float-adjusted market capitalization weighted index that measures the equity performance of large capitalization companies from developed markets around the world, excluding the United States. It includes those S&P Developed Ex-U.S. LargeMid Cap Index companies with higher price-to-book ratios and higher expected growth values. This index includes the reinvestment of dividends and income but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The S&P Developed Ex-U.S. SmallCap Index** with gross dividends is an unmanaged, float-adjusted market capitalization weighted index that measures the equity performance of small capitalization companies from developed markets around the world, excluding the United States. This index includes dividends and distributions but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The S&P Emerging Markets Index** is an unmanaged, float-adjusted, market capitalization-weighted index that measures the equity performance of companies from developing markets around the world. This index includes dividends and distributions but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The S&P Emerging Markets LargeMidCap Index** is an unmanaged, float-adjusted market capitalization weighted index that measures the equity performance of large and mid capitalization companies from emerging markets around the world. This index includes the reinvestment of dividends and income but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The S&P Global LargeMidCap Index** with net dividends is an unmanaged, float-adjusted market capitalization weighted index that measures the equity performance of mid to large capitalization companies from markets around the world. This index is derived using the S&P Global BMI Index, filtered to include companies with mid to large capitalization. This index includes dividends and distributions net of withholding taxes, but does not reflect fees, brokerage commissions, or other expenses of investing. Stocks of small companies usually experience more volatility than mid and large sized companies.

**The Russell 1000 Value Index** with gross dividends is an unmanaged, market capitalization weighted index that measures the performance of the large-cap segment of the U.S. equity universe. It includes those Russell 1000 Index companies with lower price-to-book ratios and lower expected growth values. The index includes the reinvestment of dividends and income, but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The Russell 1000 Growth Index** with gross dividends is an unmanaged, market capitalization weighted index that measures the performance of the large-cap segment of the U.S. equity universe. It includes those Russell 1000 Index companies with higher price-to-book ratios and forecasted growth values. The index includes the reinvestment of dividends and income, but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The Russell 2000 Index** with gross dividends is an unmanaged, market capitalization weighted index that measures the performance of the small-cap segment of the U.S. equity universe. It is a subset of the Russell 3000 Index and includes approximately 10% of the total market capitalization of that index and includes approximately 2000 of the smallest securities based on a combination of their market capitalization and current index membership. This index includes the reinvestment of dividends and income, but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The Russell 2000 Growth Index** with gross dividends is an unmanaged, market capitalization weighted index that measures the performance of the small-cap segment of the U.S. equity universe. It includes those Russell 2000 Index companies with higher price-to-book ratios and higher expected growth values. This index includes the reinvestment of dividends and income, but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The Russell 2000 Value Index** with gross dividends is an unmanaged, market capitalization weighted index that measures the performance of the small-cap segment of the U.S. equity universe. It includes those Russell 2000 Index companies with lower price-to-book ratios and lower expected growth values. This index includes the reinvestment of dividends and income, but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The Russell Midcap Index** with gross dividends is an unmanaged, market capitalization weighted index that measures the performance of the mid-cap segment of the U.S. equity universe. It is a subset of the Russell 1000 index and includes approximately 800 of the smallest securities based on a combination of their market capitalization and current index membership. The Russell Midcap Index represents approximately 31% of the total market capitalization of the Russell 1000 companies. This index includes the reinvestment of dividends and income, but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The Russell Midcap Growth Index** with gross dividends is an unmanaged, market capitalization weighted index that measures the performance of the mid-cap segment of the U.S. equity universe. It is a subset of the Russell 1000 index and includes approximately 800 of the smallest securities based on a combination of their market capitalization and current index membership. It includes those Russell 2000 Index companies with higher price-to-book ratios and higher expected growth values. This index includes the reinvestment of dividends and income, but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The Russell Midcap Value Index** with gross dividends is an unmanaged, market capitalization weighted index that measures the performance of the mid-cap segment of the U.S. equity universe. It is a subset of the Russell 1000 index and includes approximately 800 of the smallest securities based on a combination of their market capitalization and current index membership. It includes those Russell 2000 Index companies with lower price-to-book ratios and lower expected growth values. This index includes the reinvestment of dividends and income, but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**The Dow Jones Wilshire Micro Cap Index** is an unmanaged, market capitalization weighted index is comprised of all stocks in the Wilshire 5000 Index below the 2,501st rank at June 30 of each year. This index includes the reinvestment of dividends and income, but does not reflect fees, brokerage commissions, withholding taxes, or other expenses of investing.

**VIX index:** An index designed to track market volatility with high values implying pessimism and low values implying optimism.

**Price/Book:** Price per share divided by book value per share.

**Price/CF:** Price per share divided by cash flow per share.

**Price/Earn:** Price per share divided by earnings per share.

International and emerging markets investing is subject to certain risks such as currency fluctuation and social and political changes; such risks may result in greater share price volatility. Diversification does not assure a profit or protect against a loss in a declining market.

Stocks of small companies usually experience more volatility than mid and large sized companies.

Investing in exchange-traded funds (ETFs) involves specific considerations for investors including, but not limited to, expenses, liquidity risks, and the possibility that ETF shares may trade at prices above or below their net asset value.

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