Adding Global Small Caps: The New Investable Equity Opportunity Set?

MSCI Investable Market Indices—Representing the Global Equity Universe

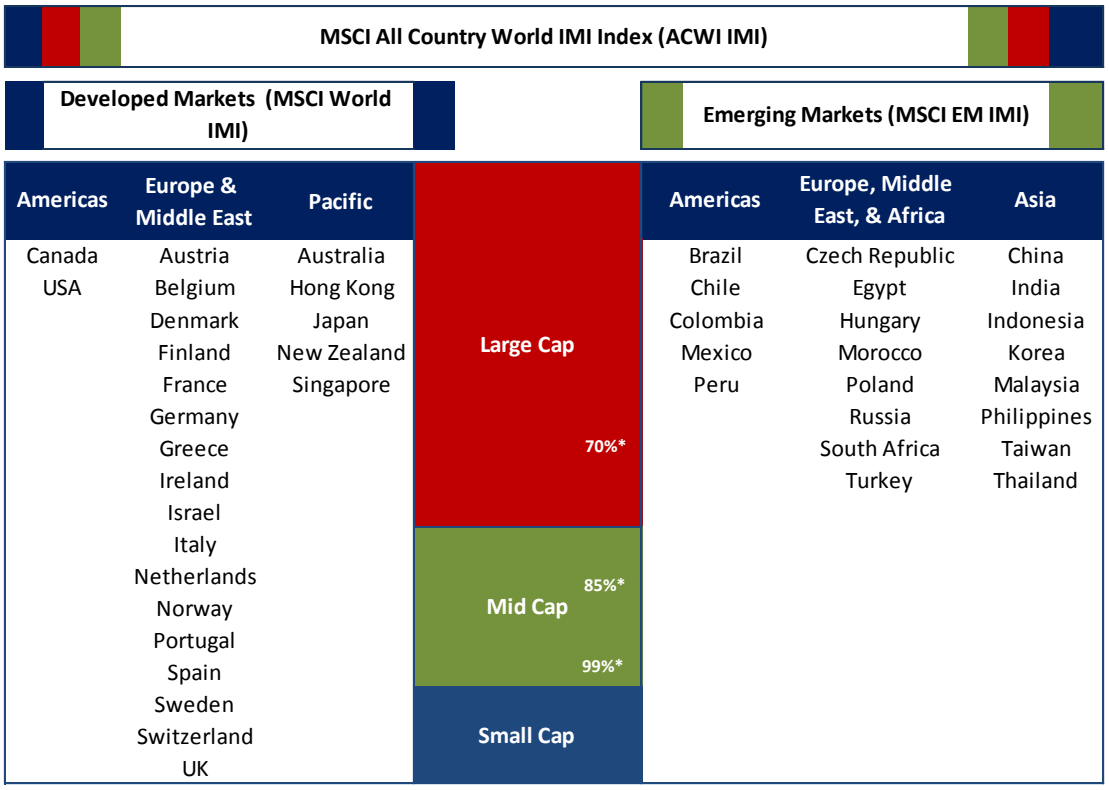
October 2012

Small Caps in the Global Equity Opportunity Set

The globalization of economies and the integration of capital markets have changed the landscape for equity investing. Institutional investors are increasingly investing in equities in both developed and emerging markets, in large, mid and small cap stocks. With accessibility to foreign markets continuing to rise and trading costs falling, this "all cap" universe may now be the potential investable opportunity set for many long-term institutional investors. For most institutional investors, adopting a global "all cap" universe generally requires adding global small caps to their global large and mid equity allocations. This paper explores certain reasons why some institutional investors have moved to a global "all cap" approach and examines certain investability characteristics of international small cap equities.

Additionally, we discuss the MSCI Investable Market Indices, which aim to represent the comprehensive global equity opportunity set. As shown in Exhibit 1, the MSCI ACWI Investable Market Index (IMI) includes large, mid and small cap stocks across 24 Developed Markets and 21 Emerging Markets countries.

Exhibit 1: MSCI ACWI IMI Country Components



With 8,611 constituents as of October 8, 2012, the index provides comprehensive coverage, covering approximately 99% of the global equity investment opportunity set. The global investable small cap stocks represent 14% (more than 6,000 names) of the MSCI ACWI IMI. [1]

There are various reasons why historically investors have failed to include small caps in their equity allocations. Among institutional investors for instance, some believe they achieve sufficient small cap exposure through the opportunistic small cap investments made by their large and mid cap active managers. Another often-cited reason among institutional investors is that small cap investing is more complicated, costly, and resource-intensive. Bender, Briand, Fachinotti, and Ramachandran (2012) discuss these issues at more length as well as the counterarguments.

Among the reasons why institutional investors have included small caps in their global equity portfolios are the following motives:

- ***Historical Small Cap Premium:*** Small caps have outperformed large and mid caps over the last decade (9.1% gross annualized total return for the MSCI ACWI Small Cap Index small caps compared to 5.1% for the MSCI ACWI Index, January, 2002 – September, 2012).
- ***Diversification Potential:*** Because large cap, mid cap and small cap segments can experience swings in performance but not always at the same time, an all cap portfolio may smooth out performance and provide additional diversification. Moreover, an all cap portfolio could potentially capture the market's economic diversity and provide more balanced sector exposures.
- ***Wider Spectrum of Opportunities:*** Investing across all cap segments reflects the complete opportunity set, providing exposure to the full equity risk premium. Also, an all cap approach allows an investor to hold stocks while they may potentially grow from small to large cap over time.
- ***More Access and Lower Costs:*** Small caps, once viewed as expensive to trade and illiquid, have become much less so today. Although small caps in general continue to be less accessible and more costly to transact than large and mid caps, in many cases accessibility issues appear to have eased over time as markets and trading environments have evolved.

The Small Cap Premium around the World

Historically, institutional investors typically confined themselves to large caps because they were thought to provide sufficient representation of a given market. Many investors favored large caps because they were the most liquid securities issued by large, stable companies. Small caps, and even mid caps, were often excluded due to liquidity and investability concerns. However, over the last decade large cap returns have trailed smaller stock returns in most markets. Exhibit 2 shows the historical returns of certain flagship MSCI Standard Indices (which include only large and mid caps) in comparison to the corresponding MSCI Investable Market Indices (which include large, mid and small caps).

[1] DM countries include: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal,Singapore, Spain, Sweden, Switzerland, the UK and the US. EM countries include: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand and Turkey.
*Percent of Free Float Adjusted Market Coverage. For further details please refer to the MSCI Global Investable Market Indices Methodology, Aug 2012, MSCI.

Exhibit 2: Performance of MSCI Investable Market Indices Alongside MSCI Standard (Large + Mid Cap) Indices (Using Monthly Returns September 2002 to September 2012)

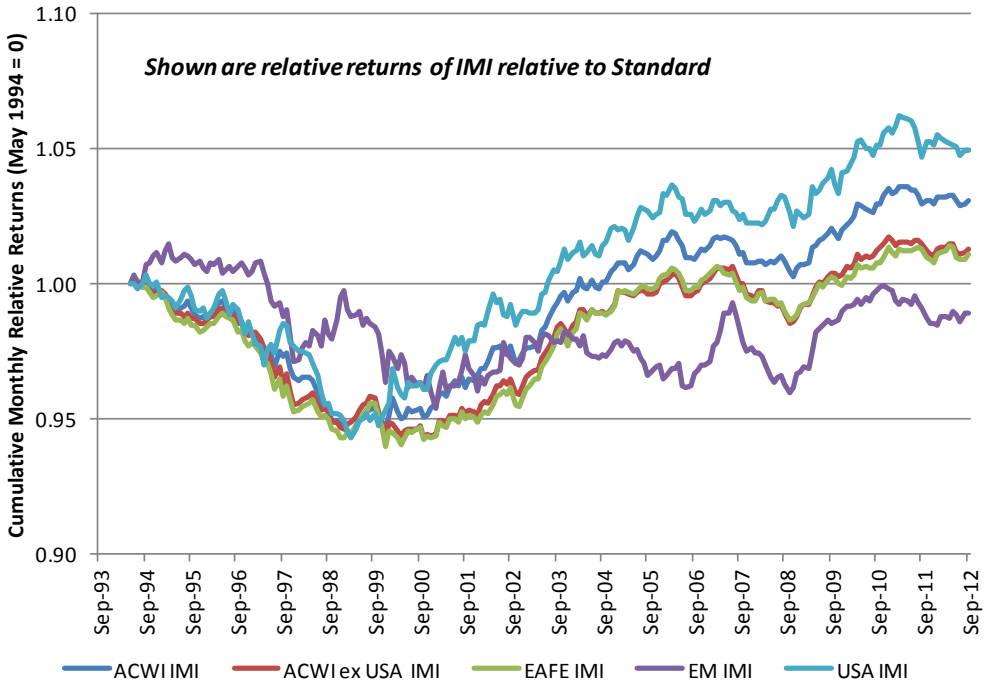
	Global (Developed & Emerging Mkts)				Developed Markets				Emerging Markets	
	ACWI	ACWI IMI	ACWI ex USA	ACWI ex USA IMI	EAFE	EAFE IMI	USA	USA IMI	EM	EM IMI
Annualized Returns	7.8%	8.3%	9.0%	9.4%	7.4%	7.8%	6.9%	7.5%	15.7%	15.9%
Annualized Volatility	17.4%	17.5%	19.5%	19.6%	18.8%	18.9%	15.6%	16.0%	24.4%	24.5%
Return to Risk Ratio	0.45	0.47	0.46	0.48	0.39	0.41	0.45	0.47	0.64	0.65

Because of higher returns to small caps across the globe in the last decade, these MSCI Investable Market Indices (MSCI ACWI IMI, MSCI ACWI ex USA IMI, MSCI EAFE IMI, MSCI Emerging Markets IMI, and MSCI USA IMI) earned higher returns and higher return-to-risk ratios than their large + mid cap counterparts. From September 2002 to September 2012, the MSCI ACWI IMI delivered 8.3% annualized return compared to 7.8% for the MSCI ACWI Index, an annual gain of 48 bps. Small caps (the MSCI ACWI Small Cap Index) by themselves earned 11.6% annually during this period, outperforming MSCI ACWI Index by 389 bps annually.

Exhibit 3 charts the relative performance of small caps (note that historical data for the MSCI Investable Market Indices begin in May 1994). It is important to note that small caps have not always outperformed large and mid caps. For instance, the MSCI ACWI IMI underperformed MSCI ACWI by 144 bps on average annually from June 1994 to December 1999. Long-term institutional investors who hold stocks over a reasonably long period can potentially benefit from short-term cycles in small caps which may be reflective of market mispricings.[2]

[2] The performance of small caps has been widely studied by academics and practitioners since the 1980s. The research in this area is often referred to as the "small cap premium, "size premium", or the "size anomaly" literature. This premium has been found to exist even after influences are controlled for: market beta, the value effect, the momentum effect, liquidity effects, leverage, and so forth. Why does the small cap premium exist? The question is one of ongoing debate but various reasons have been proposed. Fama and French (1993) originally hypothesized that small caps have higher systematic risk which earns them a higher return premium. Subsequent researchers suggested that size may proxy for other unobservable and underlying risk factors associated with smaller firms such as liquidity (Liu (2006) and Amihud (2002)), information uncertainty (Zhang (2006)), financial distress (Chan and Chen (1991) and Dichev (1998)), or default risk (Vassalou and Xing (2004)). Another line of reasoning is that small caps are mispriced by investors due to behavioral biases (Lakonishok, Shleifer, and Vishny (1994)).

Exhibit 3: The Performance of Different Cap Segments Can Be Cyclical (Cumulative USD Gross Returns of MSCI Small Cap Indices Relative to MSCI Standard Indices in Each Region, June 1994 to September 2012)



Aspects of the "All Cap" Portfolio

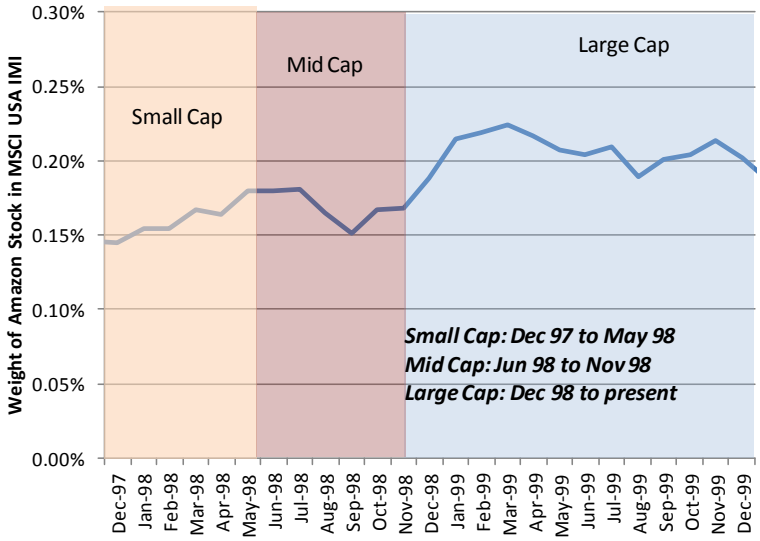
Historical performance aside, global institutional investors whom have adopted an all cap portfolio have done so for a variety of other reasons. First, because large cap, mid cap, and small cap stocks may at times tradeoff periods of relative under- and outperformance, some investors believe that holding all three segments may potentially provide a natural diversification of these cycles. It turns out, for instance, that the risk or volatility of an MSCI Investable Market Index has at times been the same or quite close to that of its large + mid cap counterpart, even though small caps had higher volatility, because of the diversification effects between large + mid and small caps. For example, Exhibit 4 shows that the annualized volatility for the flagship MSCI Investable Market Indices were all on par with volatility of the MSCI Standard Indices in the 10 years to 2012.

Exhibit 4: Diversification Effects From Small Caps (Annualized Standard Deviation of Monthly Returns, September 2002 to September 2012)

	IMI	Large + Mid Cap (Standard)	Small Cap
MSCI ACWI	17.5%	17.4%	19.6%
MSCI ACWI ex USA	19.6%	19.5%	21.2%
MSCI EAFE	18.9%	18.8%	20.4%
MSCI Emerging Markets	24.5%	24.4%	26.2%
MSCI USA	16.0%	15.6%	20.5%

A second reason why some institutional investors have adopted an all-cap approach is because an all-cap portfolio can capture the potential benefits of holding long-term a company that may grow over time from small cap to large cap. As shown in Exhibit 5, Amazon's transition from a small to mid to large cap stock occurred over a short span of years in the late 1990s. Another example is Apple, which debuted as a mid cap stock and grew from 0.05% of the MSCI USA IMI in December 2002 to 4.0% by August 2012.

Exhibit 5: Weight of Amazon (Ticker: AMZN) in the MSCI USA IMI



The example above shows how an all cap portfolio historically captured a wider spectrum of opportunities. As shown in Exhibit 6, small caps comprise nearly 14% of the global investable equity universe and include over 6,000 companies, many more than in large plus midcaps. Investing across all cap buckets provides exposure to the full equity risk premium.

Exhibit 6: Investable Market Indices (As of October 9, 2012)

	Standard (Large + Mid)		Small Caps	
	Number of Names	Percent of Market Cap	Number of Names	Percent of Market Cap
MSCI ACWI	2,442	86.2%	6,169	13.8%
MSCI ACWI ex USA	1,838	86.8%	4,299	13.2%
MSCI EAFE	921	85.8%	2,250	14.2%
MSCI Emerging Markets	817	85.9%	1,805	14.1%
MSCI USA	604	85.5%	1,870	14.5%

A third rationale some institutional investors provide for considering allocations across different size segments is the natural diversification from holding stocks with very different characteristics and risk profiles. As discussed in Bender, Briand, Fachinotti, and Ramachandran (2012), large caps and small caps capture different aspects of global equities. Large caps and small caps for instance tend to

represent different industries; large caps will have stronger orientation towards industries with economies of scale (e.g. Energy and Telecommunication Services). In addition, large caps often tend to derive more of the revenue from abroad, making small caps typically relatively more "local-economy"-driven. Thus, some institutional investors believe that an all cap portfolio may better reflect a market's underlying economic diversity and may provide more balanced exposures across sectors and companies of different characteristics.

Lastly, including small caps in an all cap portfolio may result in different country and sector weights. Compared to a global portfolio of large + mid cap stocks (MSCI ACWI Index), the large + mid + small global portfolio (MSCI ACWI IMI, as of September, 2012) is weighted modestly toward countries such as Canada (+0.05 percentage points), Taiwan (+0.1), Japan (+0.2), and the United States (+0.5), and away from Europe (-0.8%), where small caps are less predominant. Similarly, compared to the MSCI ACWI Index, MSCI ACWI IMI is weighted more towards Industrials (+1.1 percentage points) and Consumer Discretionary stocks (+0.7) and less towards Consumer Staples (-0.8) and Telecommunication Services (-0.5).

MSCI Global Investable Market Indices: Investability Criteria

Accessing international small cap stocks presents a number of challenges. The actual number of shares available for investors outside the home market may be limited either because many shares are not actually available to non-strategic shareholders or because governments impose foreign ownership limits. Moreover, some stocks that are reasonably large in terms of market capitalization may not be very investable. These stocks may not trade very often or not trade in large enough quantitites. The importance of liquidity and investability cannot be over stated, which is where the rules for index construction become critical. One common misperception is that small caps are not investable. There are in fact two distinct segments of small caps – those that are investable and those that are not. The difference between the two is not trivial.

In creating the MSCI Investable Market Indices, MSCI utilizes a unique methodology to define which stocks qualify based on stringent rules regarding a stock's liquidity, investability, and tradability, particularly from the perspective of international investors. As part of the construction of the index, stocks that are not liquid enough or do not have enough shares available for purchase by foreign investors are screened out, even if they are relatively large in terms of market capitalization. This ensures that small cap stocks that are too costly to trade or don't have enough shares available are not in the index.

For example, the main investability criteria for developed market stocks to be considered for the global equity universe are:

- A minimum Foreign Inclusion Factor Requirement reflecting the amount of shares available for foreign investors
- A minimum full market cap size requirement
- A minimum Free Float-Adjusted Market Capitalization Requirement
- A minimum Length of Trading Requirement
- Long-term and short-term liquidity levels

- Minimum levels for the 12-month and 3-month Annual Traded Value Ratio (ATVR)[3]
- Minimum levels for 3-month Frequency of Trading

Stocks must meet these investability requirements in order to make it into a final equity universe of the MSCI Investable Market Indices. The MSCI Investable Market Indices use a unique approach to balance coverage of each market with size integrity. In other words, this approach sufficiently captures enough of the entire market (i.e., at least 99% of its cumulative market capitalization), but avoids stocks that are too small. The Appendix discusses this challenge in more detail and how we address it by creating a coverage target area for individual market size segments. The result is that the MSCI Investable Market Indices, which target 99% of the free float-adjusted investable equity universe, are not made up of stocks from only the largest countries and are as representative as possible of all markets while remaining investable.

More than a quarter (by number of companies) of small caps are not eligible for inclusion based on their lack of investability alone.[4] Exhibit 7 shows the average free float of small caps relative to large + mid caps as a percentage of total shares. In developed markets (MSCI World Index), for instance, small caps have an average percentage float (75%) that, as of November, 2011, was close to the float for large + mid caps (82%).

Exhibit 7: Float and Liquidity Characteristics of MSCI Index Constituents (November 30, 2011)

Average Float (in %)	Large + Mid Cap Companies	Small Companies	Average ATVR (in %)	Large + Mid Cap Companies	Small Companies
ACWI	73	68	ACWI	130	132
World	82	75	World	113	91
EM	56	52	EM	164	229
USA	94	87	USA	81	77
Europe	73	67	Europe	133	83
Japan	76	62	Japan	156	129
Pacific ex Japan	72	61	Pacific ex Japan	117	105

Source: MSCI. All analysis based on MSCI ACWI IMI constituents as of November 30, 2011

MSCI uses an Annual Traded Value Ratio (ATVR, shown in Exhibit 7) to screen out extreme daily trading volumes, taking into account the free float-adjusted market capitalization size of securities. The lower the ATVR, the less liquid the security. The average ATVR for developed market small caps (91%) is not much lower than that for developed market large + mid caps (113%).[5]

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[3] ATVR is computed as follows. First, monthly median traded values are computed as the median daily traded value multiplied by the number of days in the month that the security traded. The daily traded value of a security is equal to the number of shares traded during the day multiplied by the closing price of that security. Second, the monthly median traded value of a security is divided by its free float-adjusted security market capitalization at the end of the month, giving the monthly median traded value ratio. Finally, the 12-month ATVR is obtained by taking the average of the monthly median traded value ratios of the previous 12 months – or the number of months for which this data is available (previous 6 months, 3 months or 1 month) – and annualizing it by multiplying it by 12.

[4] In the recent November 2011 Semi-Annual Index Review, approximately 27% of the names of the eligible universe of small caps (accounting for approximately 8% of the float-adjusted market capitalization) were screened out and excluded. As part of the index construction, MSCI first identifies an eligible stock universe which is comprised of securities that meet the eligibility constraints relating to share classes and share types, as described in the MSCI Global Investable Market Indices methodology, and meet the minimum equity size requirement ($119 million as of the November 2011 Semi-Annual Index Review.) (For developed markets, these included all stocks with a market cap between $119 million and $3.38 billion. For emerging markets, these included all stocks with a market cap between $119 million and $1.69 billion). Combining developed and emerging markets, the small cap eligible universe in November 2011 had 10,133 securities. After the investability screens were applied, there remained 7,395 stocks. These 7,395 stocks represent 92% of the eligible universe's float-adjusted market cap.

[5] And interestingly, the average float can be higher for small caps as in the case of emerging market stocks in Asia and EMEA. Somewhat counterintuitively, the relationship between ATVR and market capitalization is not directly parallel. ATVR can be low for certain larger cap names and vice versa.

Conclusion

In an increasingly integrated world, some institutional investors are shifting from the traditional regional and cap-segmented view of equities towards a global "all cap" view of equities. Today, the natural full opportunity set for many institutional investors is a broad yet investable global equity portfolio.

Investability is one of the cornerstones of the MSCI Global Investable Market Indices Methodology. The Investable Market Indices utilize a unique methodology which focuses on the investability of stocks around the world, particularly from the viewpoint of international investors.

The MSCI Investable Market Indices combine non-overlapping large caps, mid caps, and small cap stocks. For investors adopting a global all cap approach to equity portfolio construction, the MSCI Investable Market Indices are an essential tool to support their investment processes -- including benchmarking, asset allocation and passive replication.

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Appendix

Traditionally, indices aiming to represent the global investable universe have largely followed a percentile approach for defining size segments. A fixed percentile of the market provides perfect country representation in size composites. However, it offers very little size integrity within each size segment. For example, if MSCI included all the stocks from largest to smallest until we reached 85% of the free float adjusted cumulative market cap, the index would include stocks that are quite small. Exhibit A1, for example, shows that we would end up including very small stocks in markets like New Zealand.

Exhibit A1: Company Full Market Capitalization (USD Million) at the 85th Percentile of Investable Universe

	Canada	USA	Europe	Australia	Hong Kong	Japan	New Zealand	Singapore
85%	3,243	4,125	5,100	2,323	2,304	1,503	269	599

Data as of March 1, 2012.

Alternatively, if we just took all stocks above a certain fixed USD market capitalization level, the index would have perfect size integrity but at the cost of uneven country composition, as shown in Exhibit A2.

Exhibit A2: Percentile Coverage of the Investable Universe at the Full Market Capitalization Cutoff of USD 3.5 Billion

	Canada	USA	Europe	Australia	Hong Kong	Japan	New Zealand	Singapore
USD 3.5 Billion	83.6%	87.0%	88.3%	80.7%	74.4%	73.8%	34.6%	65.8%

Data as of March 1, 2012.

MSCI's methodology strikes a balance by creating a coverage target area for individual market size segments. In order to create size components that can be meaningfully aggregated into composites, the MSCI Global Investable Market Indices Methodology seeks to strike a balance between size integrity and coverage target area for individual market size segments:

- Global Minimum Size Ranges: A size range for all markets derived from a free float-adjusted target market capitalization of the Global Investable Equity Universe
- Market Coverage Target Ranges: A target free float-adjusted coverage range set within each individual Market Investable Equity Universe

The intersection of these ranges specifies a Size and Coverage Target Area for each size segment in each market, which is used to find a balance between size integrity and market coverage.

Full details of MSCI's unique index methodology can be found in the MSCI Global Investable Market Indices Methodology (2012).

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The company's flagship product offerings are: the MSCI indices with approximately USD 7 trillion estimated to be benchmarked to them on a worldwide basis[1]; Barra multi-asset class factor models, portfolio risk and performance analytics; RiskMetrics multi-asset class market and credit risk analytics; MSCI ESG (environmental, social and governance) Research screening, analysis and ratings; ISS governance research and outsourced proxy voting and reporting services; FEA valuation models and risk management software for the energy and commodities markets; and CFRA forensic accounting risk research, legal/regulatory risk assessment, and due-diligence. MSCI is headquartered in New York, with research and commercial offices around the world.

[1] *As of June 30, 2011, based on eVestment, Lipper and Bloomberg data.*