

# Are Small Caps Truly Domestic?

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# Executive Summary

With increasing globalization many companies, both large and small, are expanding their global footprint in the quest for growth. The global profile of large multinational companies is well documented in investment research<sup>1</sup>. While small cap firms have traditionally been viewed as being domestically oriented, we are also witnessing the emergence of many small cap companies that are venturing outside their domestic markets. At the same time, the global universe of small cap companies has grown significantly over the last decade, driving the rise of dedicated institutional small cap mandates in number and assets under management. We believe this makes an analysis of the revenue profile of global small caps truly apposite.

Our paper offers new insights on this nascent yet fast developing trend of globalization of small cap companies, by analyzing the economic exposures of a diverse universe of global small cap companies from the universe of MSCI ACWI + Frontier Markets (ACWI FM) IMI Index. The study draws upon the recently launched MSCI Economic Exposure Security Data Modules that now offer an expanded coverage of nearly 8,700 companies across large, mid and small cap segments from developed, emerging and frontier markets, covering 99% of the global equity universe<sup>2</sup>.

Our analysis highlights that economic exposure may be a significant determinant of performance of global small cap portfolios. For example, the simulated MSCI Small Cap Indices with Domestic Exposure outperformed their international counterparts with lower risk, during the back-test period Nov 2007 – Aug 2013.

The rest of the paper is organized as follows. First we retrace the evolution of the global small cap investment landscape and highlight the information inefficiencies traditionally associated with the small cap universe. In the second section, we examine the economic exposure profiles of key MSCI small cap benchmarks across different regions and sectors. In the third section, we contrast the economic exposure of global small caps with large and mid-cap companies and highlight key differences in historical performance, risk and other portfolio characteristics. In the fourth section, we present a case study to illustrate the application of economic exposure in the active management of small cap portfolios. Section five concludes and reiterates the increasing relevance of economic exposure data in the investment process.

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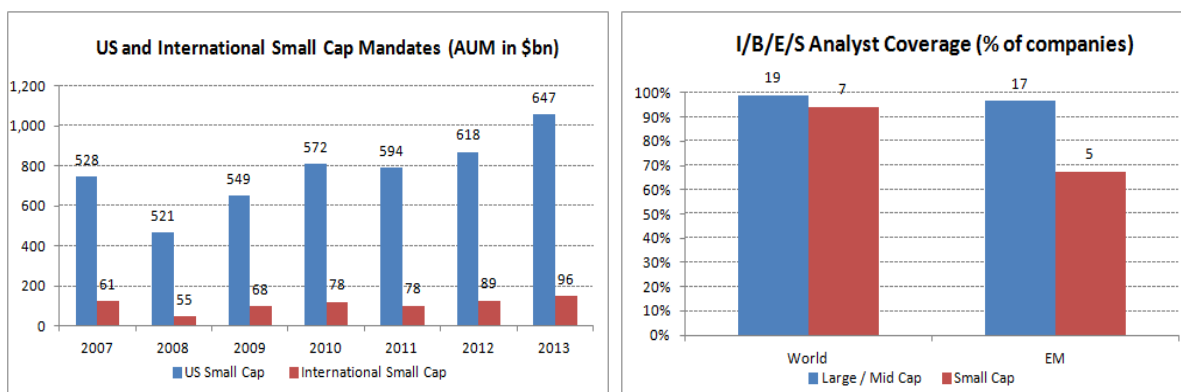
<sup>1</sup> For example, see [How European is Europe?](#) MSCI 2013.

<sup>2</sup> Please refer to the [MSCI Economic Exposure Data Methodology](#) for more details on the economic exposure calculations

# Economic Exposure and the Small Cap Investment Landscape

Dedicated small cap mandates have grown over time across US and Non-US regions, based on an analysis of the eVestment database<sup>3</sup>. Exhibit 1 shows the number of small cap mandates and the aggregate assets under management. However, dedicated small cap products remain fewer than large, mid, and all cap products<sup>4</sup>.

*Exhibit 1: Evolution of Small Cap Mandates and Analyst Coverage of Small Cap Companies*



Source: eVestment Database, I/B/E/S. Only mandates with AUM more than \$100 million covered. The number on top of the bars on the first chart shows the number of small cap mandates at the end of the year, while the number on top of the bars on the second chart shows the average number of analysts covering each company in the index

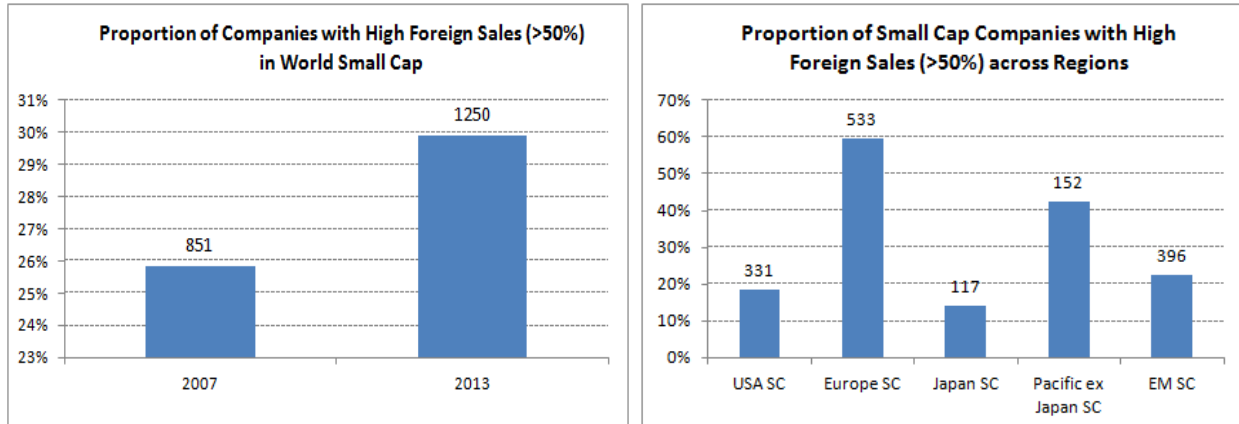
One often cited reason for excluding small caps in the institutional portfolio is that small cap investing is complicated, expensive and resource-intensive. For example, exhibit 1 shows the analyst coverage and the average number of analysts per company across size-segments. The analyst coverage is just over 90% for developed market small caps, and nearly 70% for emerging market small cap companies. The average number of analysts covering a small cap company is much lower than those of developed market companies.

Economic exposure data for small cap companies brings a new dimension to the construction and evaluation of small cap portfolios. Economic exposure for small caps brings a greater transparency to the investment process and may complement traditional approaches to performance attribution for this asset class.

<sup>3</sup> eVestment Alliance contains self-reported manager information. This database covers a substantial portion of institutional mandates at least in the US (similar consolidated databases are unavailable for Europe and Asia.)

<sup>4</sup> For example, see [Small Caps – No Small Oversight. MSCI 2012](#)

*Exhibit 2: Foreign sales of Small Cap Companies*



Source: Worldscope. The foreign sales (%) data as of 2007 based on Worldscope. Out of 4603 MSCI ACWI Companies in 2007, 3294 companies had foreign sales (%) data in Worldscope.

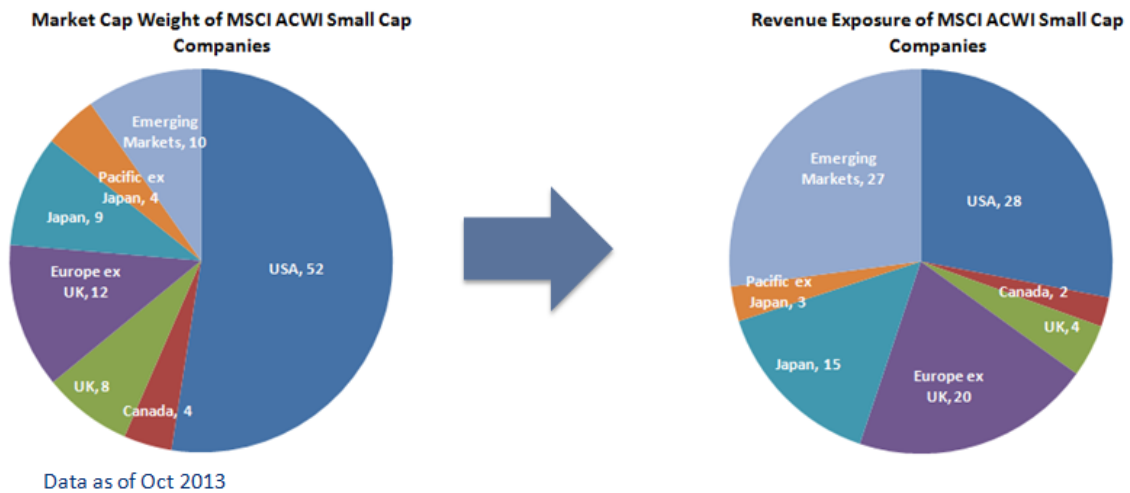
Furthermore, a commonly held view about small cap companies is that they are usually domestic businesses and that their performance is closely tied to the performance of local economies. While there is some evidence of this, our analysis underscores that a significant part of the small cap universe has appreciable international exposure. Exhibit 2 shows the proportion of small cap companies that derive more than half their sales outside their borders. It can be seen that the proportion has increased marginally for developed market small caps, and forms a significant portion of the small cap universe across regions (from 15% for Japan to nearly 60% for Europe).

## Understanding Economic Exposures of Small Cap Mandates

Exhibit 3 contrasts the market cap weight and the revenue profile of a typical global small cap mandate, the MSCI ACWI Small Cap Index. USA accounts for over half the MSCI ACWI Small Cap by market cap weight, but its revenue contribution is lower at 28%. In addition, the UK also has 8% by market cap weight, but its revenue exposure to the UK itself is lower at 4% reflecting a high international orientation.

In contrast, emerging market small cap companies account for 10% of the MSCI ACWI Small Cap by weight, but 27% by revenue exposure. The market cap weights of Japan and Europe ex the UK are also lower than their domestic revenue exposure contributions.

*Exhibit 3: Contrasting the Market Cap Weights and Revenue Exposures of a typical Global Small Cap Mandate*



*Exhibit 4: Economic Exposure of MSCI World, USA and EM Small Cap Sectors*

Region	North America		Japan	Pacific ex Japan		Emerging and Frontier Markets		Other
	America	Europe		Japan	Other			
<b>MSCI World SC</b>	36	29	18	3	12	2		
Information Technology	34	20	16	3	24	2		
Energy	44	26	9	5	14	3		
Telecommunication Services	41	32	0	13	11	4		
Industrials	33	29	19	4	13	2		
Consumer Staples	33	17	36	1	11	2		
Health Care	61	14	15	2	6	1		
Financials	31	55	8	2	4	1		
Consumer Discretionary	38	26	21	4	10	1		
Materials	32	22	19	4	19	4		
Utilities	53	38	2	3	2	2		
<b>MSCI USA SC</b>	77	8	2	2	10	1		
Information Technology	50	16	3	4	24	2		
Energy	81	6	0	6	6	2		
Telecommunication Services	76	2	0	0	22	1		
Industrials	78	9	2	1	9	1		
Consumer Staples	85	4	1	1	8	2		
Health Care	89	5	1	0	4	1		
Financials	88	3	1	1	5	2		
Consumer Discretionary	80	8	2	1	8	1		
Materials	69	13	2	2	13	2		
Utilities	97	3	0	0	0	0		
<b>MSCI EM (Emerging Markets) SC</b>	5	5	2	1	85	2		
Information Technology	11	9	5	2	70	3		
Energy	3	3	2	2	88	1		
Telecommunication Services	0	0	1	0	98	0		
Industrials	4	5	3	2	83	2		
Consumer Staples	4	4	1	1	88	2		
Health Care	4	2	1	2	91	1		
Financials	0	0	0	0	99	0		
Consumer Discretionary	6	4	2	2	85	1		
Materials	5	6	3	1	82	3		
Utilities	1	1	0	0	97	0		

Data as of Oct 2013

Exhibit 4 shows the economic exposures by sectors for the MSCI World, USA and the MSCI Emerging Markets Small Cap companies. Within MSCI World Small Cap, Health care and Utility companies have a high exposure to North America while Information Technology and Materials have a high exposure to emerging markets in 2013. The top four sectors in the MSCI USA Small Cap Index with relatively high international exposure are Information Technology, Materials, Telecom and Industrials. Within MSCI Emerging Markets Small Cap, Information Technology and Consumer Discretionary companies have relatively high exposure to North America, while Utilities and Telecom companies have a high domestic exposure.

## Contrasting International Exposures of Small Cap with Large / Mid Cap Companies

In this section, we contrast the economic exposure of small cap companies with large/mid cap companies. We analyze the implication of economic exposure on the various facets of small cap investing, including performance, valuations and other fundamental data, and Barra GEM2 style factor exposures.

Exhibit 5 contrasts the economic exposure of large/mid and small cap companies for various regions. For example, the companies that are part of the MSCI USA Index have a revenue exposure of 67% to North America, compared to 77% for the MSCI USA Small Cap. Across regions (with the exception of Pacific ex Japan), the small cap companies have markedly higher exposure to the home region vis-à-vis their large/mid cap counterparts.

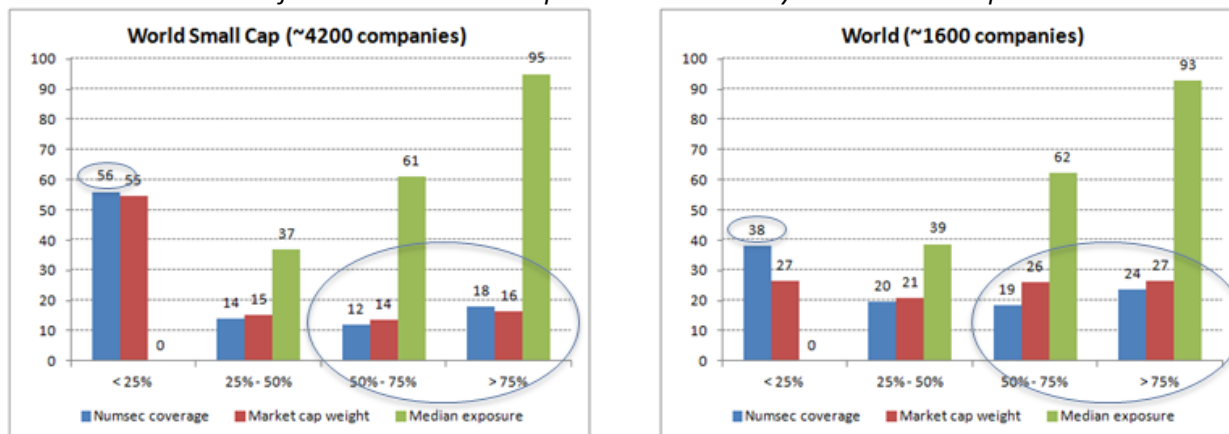
What is more striking is the extent of international exposure of small caps across regions. For example, MSCI USA small caps have 23 % exposure outside North America, MSCI Europe small caps have nearly 29% exposure outside Europe and MSCI Pacific ex Japan small caps have 48% exposure outside Pacific ex Japan. MSCI EM small cap companies have a lower exposure of 15% to developed markets.

*Exhibit 5: Contrasting the Economic Exposures of Large/Mid Cap Companies vis-à-vis Small Cap Companies for Various Regions*

Target Region	World		USA		Europe		Japan		Pacific ex Japan		EM	
	Large / Mid Cap	Small Cap	Large / Mid Cap	Small Cap	Large / Mid Cap	Small Cap	Large / Mid Cap	Small Cap	Large / Mid Cap	Small Cap	Large / Mid Cap	Small Cap
North America	37	36	67	77	17	9	10	4	12	11	7	5
Europe	25	29	11	8	51	71	5	3	7	8	7	5
Japan	13	18	3	2	3	2	67	82	3	2	2	2
Pacific ex Japan	4	3	1	2	2	1	2	1	51	52	1	1
EFM	18	12	14	10	23	15	14	9	23	25	80	85
Other	3	2	2	1	3	3	2	1	4	3	2	2

Data as of Oct 2013

*Exhibit 6: Distribution of MSCI World Small Cap and MSCI World by International Exposure Buckets*



Data as of Oct 2013

Exhibit 6 shows the distribution of international exposures of developed market companies across 4 exposure buckets, in steps of 25%. Nearly 30% of the MSCI World Small Cap companies accounting for 30% by weight have an international exposure greater than 50%. In contrast, 43% of the MSCI World companies accounting for 53% by weight have an international exposure more than 50%.

*Exhibit 7: Median Performance and Risk of MSCI World Small Cap and MSCI World Companies by International Exposure Buckets*

World Small Cap (Returns)						World Large / Mid Cap (Returns)					
Intl Exp bucket	5th %tile	25th %tile	Median	75th %tile	95th %tile	Intl Exp bucket	5th %tile	25th %tile	Median	75th %tile	95th %tile
< 25%	-16.7	1.9	11.6	24.9	54.5	< 25%	-11.3	4.6	11.8	22.1	39.7
25% - 50%	-18.3	0.4	11.0	21.2	40.3	25% - 50%	-16.5	3.5	12.7	21.7	37.5
50% - 75%	-21.3	-1.6	10.4	20.9	41.2	50% - 75%	-14.1	2.2	11.6	20.1	34.4
> 75%	-33.1	-8.5	7.2	20.2	48.3	> 75%	-16.7	0.7	10.4	20.0	36.0
Total	-22.1	-0.3	10.7	22.9	50.0	Total	-14.0	3.3	11.6	21.1	37.6

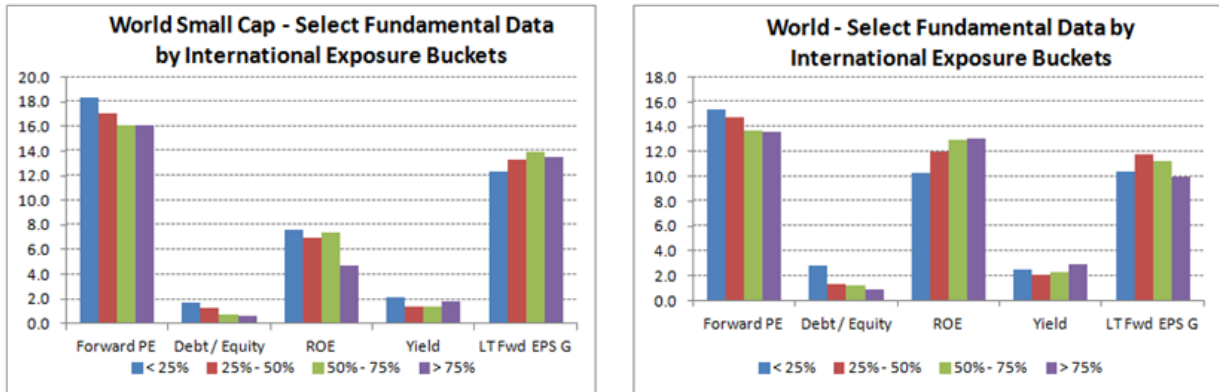
  

World Small Cap (risk)						World Large / Mid Cap (risk)					
Intl Exp bucket	5th %tile	25th %tile	Median	75th %tile	95th %tile	Intl Exp bucket	5th %tile	25th %tile	Median	75th %tile	95th %tile
< 25%	14.9	22.6	30.0	40.7	62.1	< 25%	12.7	17.5	23.1	29.6	45.1
25% - 50%	17.9	25.6	32.0	41.8	59.4	25% - 50%	14.0	21.5	26.4	31.9	44.5
50% - 75%	19.6	26.9	34.1	42.7	59.0	50% - 75%	14.6	21.4	27.4	32.5	42.2
> 75%	19.6	28.3	36.9	46.1	65.9	> 75%	14.4	20.0	26.0	32.6	44.3
Total	16.4	24.7	32.1	42.6	61.9	Total	13.5	19.3	25.1	31.5	44.6

Data as of August 2013. The distributions of return and risk are based on 3 year gross local returns of securities.

Exhibit 7 shows the median 3 year return and risk (local currency) for the developed market companies belonging to various international exposure buckets. The domestically oriented small cap companies outperformed their international peers with lower risk during this period. This trend is seen for large / mid cap companies as well.

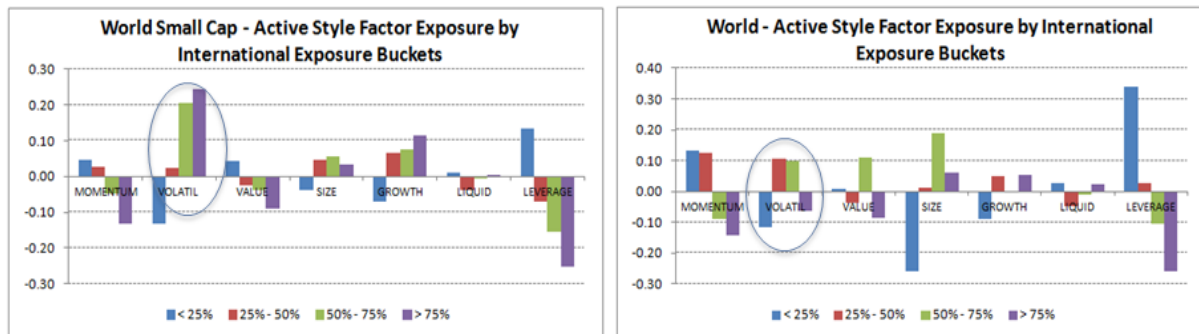
*Exhibit 8: Select Fundamental Data of MSCI World Small Cap and MSCI World Companies by International Exposure Buckets*



Data as of October 2013

Exhibit 8 shows the fundamental data for the developed market companies belonging to various international exposure buckets. The domestically oriented small cap companies have a higher forward valuation, higher debt to equity and higher return on equity as compared to their international peers. The higher leverage is driven by the significant presence of financial companies. However, the domestic large / mid cap companies have a lower return on equity as compared to their international counterparts.

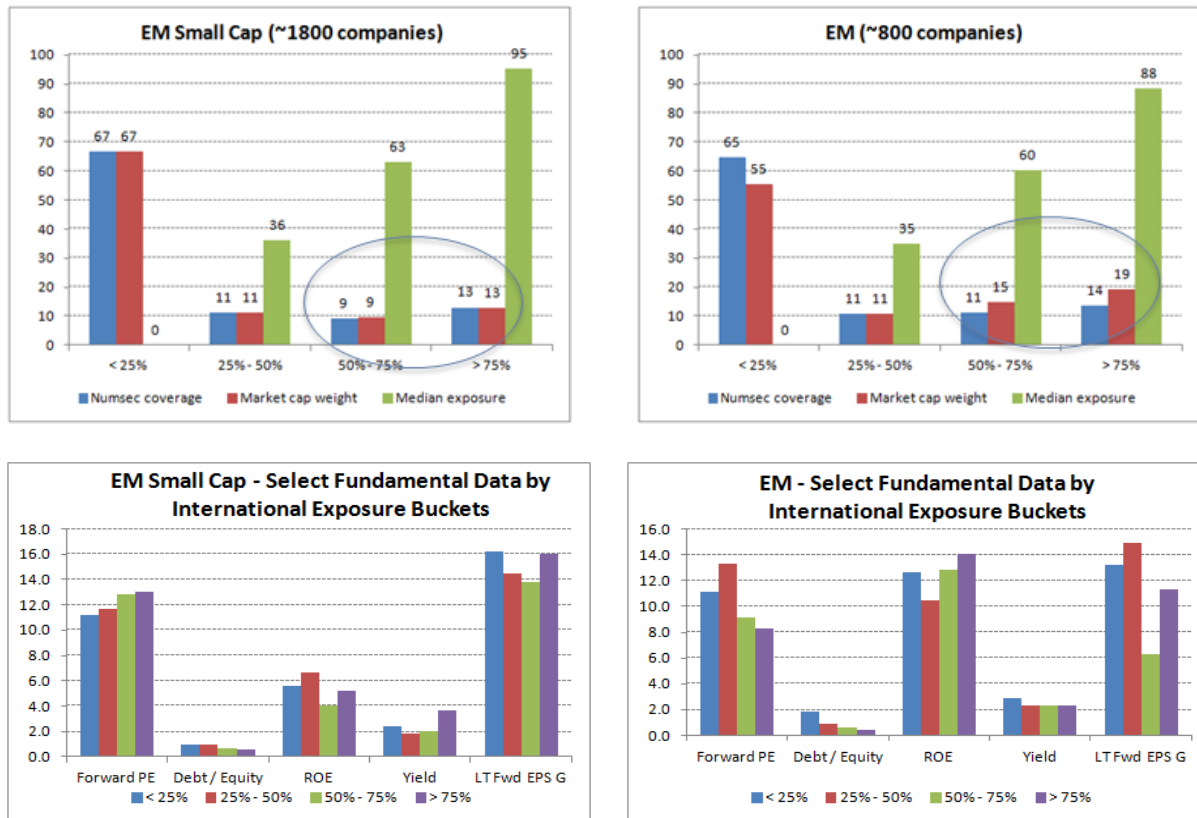
*Exhibit 9: Barra GEM2 Active Style Factor Exposures of MSCI World Small Cap and MSCI World Companies by International Exposure Buckets*



Data as of Oct 2013

Exhibit 9 shows the Barra GEM2 active style factor exposures for the companies in different exposure buckets. The domestically oriented small cap companies have a higher momentum, lower volatility, lower size, lower growth and higher leverage exposures as compared to companies with high international exposure.

*Exhibit 10: Distribution of MSCI EM Small Cap and MSCI EM Companies by International Exposure Buckets, along with Select Fundamental Data*

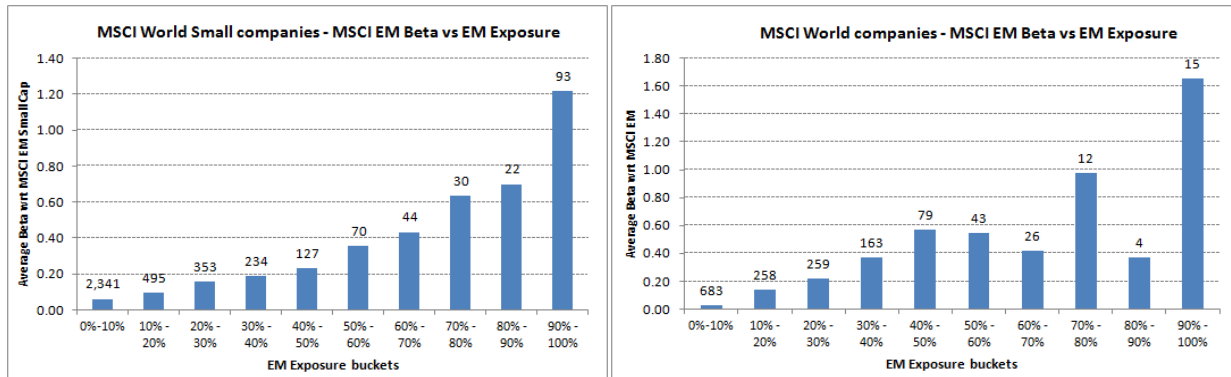


Source: I/B/E/S. Data as of Oct 2013.

Furthermore, we present a similar analysis on emerging market companies. Exhibit 10 shows the distribution of emerging market small cap companies by international exposure is similar to that of large and mid cap companies. For example, 22% of companies in the MSCI EM Small Cap Index have an international exposure greater than 50%, while the corresponding figure for large/mid cap companies is 25%. Exhibit 10 also shows select fundamental data on the emerging market companies by international exposure buckets. The domestically oriented small cap companies have lower forward valuations as measured using I/B/E/S estimates, while an opposite trend is observed for large/mid cap companies as of October 2013.

Emerging markets exposure (EM exposure) is an interesting subset of international exposures of developed market companies. We contrast the distribution of EM economic exposure and the EM beta of small caps with large/mid cap companies. Exhibit 11 shows the relationship between the EM exposure and the companies' sensitivity (beta) to MSCI EM Small Cap Index returns (or MSCI EM Index returns in the case of large/mid cap companies). We observed a monotonic relationship between the EM exposure and the beta to MSCI EM Small Cap Index, and small cap companies with high EM exposure had a higher sensitivity on average to the MSCI EM Small Cap Index returns.

*Exhibit 11: EM Exposure and EM Sensitivity of Developed Market Companies*



Data as of Aug 2013. Regression beta estimated at the stock level using 5 years of monthly gross total returns. In order to derive this relationship, we regress the returns of each company in the MSCI World Small Cap Index with both the MSCI World Small Cap Index returns (X1) and the excess returns of MSCI EM Small Cap over MSCI World Small Cap (X2). A similar analysis was performed for MSCI World companies using the MSCI World Index and the MSCI EM Index. The number on top of the bars shows the number of companies in each of the exposure buckets. Only companies with at least 3 years of stock price history were considered for analysis. The regression beta was based on the USD returns for MSCI World Small Cap and MSCI World

## Potential Applications of Economic Exposure in Small Cap Investing

In this section, we present a case study that illustrates the application of economic exposure in small cap active management.

The recent strong rally of small cap stocks across US and ex-US developed markets in 2013 has prompted many small cap managers to better understand the effects of domestic / international exposures of small caps on their performance. We aim to answer this question by evaluating the historical performance characteristics of both domestic and internationally oriented small cap portfolios and highlight the key differences in style and sector characteristics.

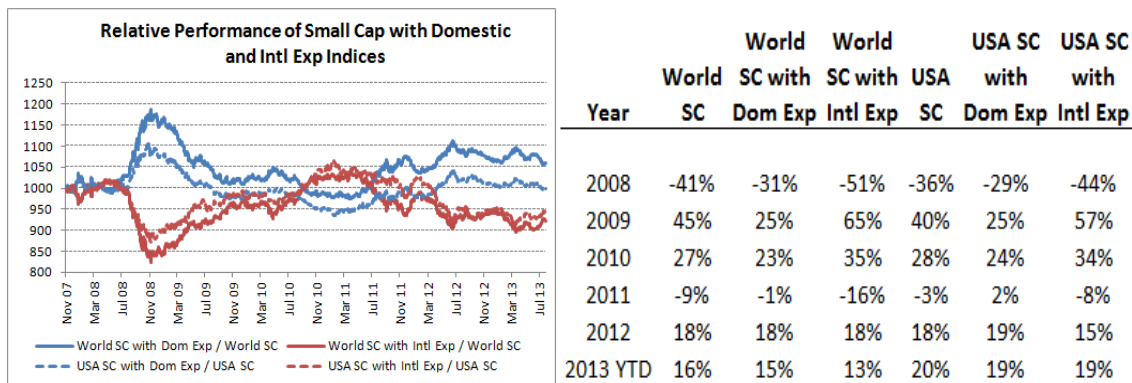
Exhibit 12 shows the results of a simulated MSCI Small Cap Indices with International Exposure over the period November 2007 – Aug 2013. The domestic exposure indices are constructed by choosing all the stocks with 100% domestic exposure, while the international exposure indices are constructed based on a select number of companies with the highest international exposure<sup>5</sup>.

<sup>5</sup> The number of companies is chosen based on the exposure meeting a certain threshold (25%), market cap coverage and number of securities as a proportion of the parent index. For more details, refer to Appendix II: Rules To Determine Fixed Number of Companies at Initial Construction of the [MSCI Economic Exposure Index methodology](#)

*Exhibit 12: Results of Simulated MSCI Small Cap Indices with Domestic and International Exposure*

Nov 07 - Aug 13	WORLD Small Cap	WORLD SC with Dom Exp	World SC with Intl Exp	USA Small Cap	USA with Dom Exp	USA SC with Intl Exp
Total Return* (%)	4.9	5.9	3.4	8.1	8.1	7.0
Total Risk* (%)	22.7	19.0	27.4	23.2	20.9	26.4
Return/Risk	0.21	0.31	0.12	0.35	0.39	0.27
Sharpe Ratio	0.17	0.26	0.09	0.31	0.34	0.23
Active Return* (%)	0.0	1.1	-1.5	0.0	0.0	-1.1
Tracking error* (%)	0.0	5.6	6.3	0.0	4.2	5.4
Information Ratio	NA	0.19	-0.23	NA	-0.01	-0.20
Historical Beta	1.00	0.82	1.19	1.00	0.89	1.12
Turnover** (%)	9.8	13.2	16.8	8.6	12.1	13.3
Number of securities	4,451	1,622	1,300	1,916	874	500
Numsec coverage (%)		36.4	29.2		45.6	26.1
Market Cap coverage (%)		36.7	33.3		43.0	31.9
Portfolio Economic Exposure (%) #		100.0	71.7		100.0	60.0
Min security level Economic Exposure (%) #		100.0	38.6		100.0	35.1
Price to Book***	1.5	1.4	1.7	1.8	1.7	2.0
Price to Earnings***	26.1	25.5	19.9	33.1	30.8	23.4
Div. Yield*** (%)	2.1	2.6	1.7	1.5	2.3	0.7

\* Annualized in USD from 30/11/2007 to 31/08/2013  
 \*\* Average annual one-way index turnover from 30/11/2007 to 31/08/2013  
 \*\*\* Average value from 30/11/2007 to 31/08/2013; # Data as of Oct 2013

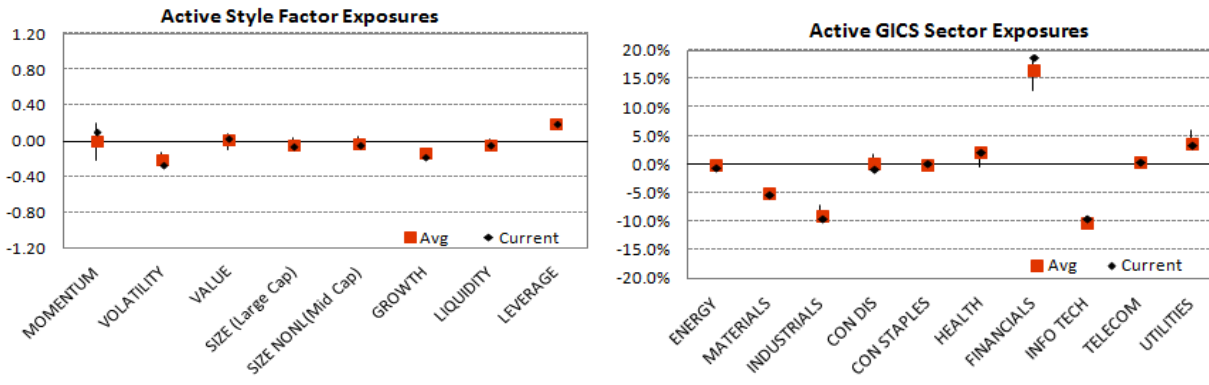


\*Historical economic exposures of small cap stocks prior to FY 2012 are based on Worldscope data and preliminary research estimates

The simulated MSCI Small Cap Indices with Domestic Exposure outperformed their international counterparts with lower risk, during the back-test period Nov 2007 – Aug 2013. In particular, these indices outperformed their respective parent indices during the crisis of 2008, and also over the last 3 years. The distinct style and sector exposures of domestic and international small cap stocks may be a key driver of their risk and performance characteristics.

*Exhibit 13: Active Barra GEM2 Style factor and Active Sector Exposures of the Simulated MSCI Small Cap Indices with Domestic and International Exposure*

**Simulated MSCI World Small Cap with Domestic Exposure Index**



**Simulated MSCI World Small Cap with International Exposure Index**

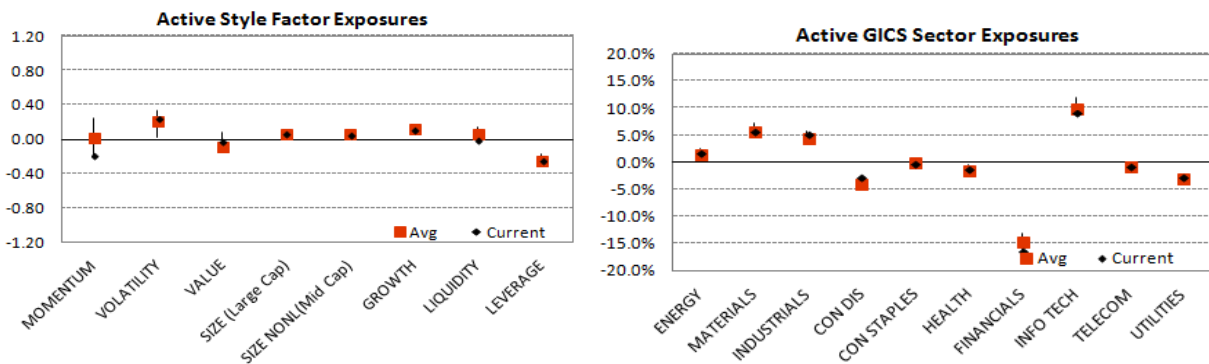


Exhibit 13 shows the active style and sector exposures of the simulated MSCI World Small Cap Indices with Domestic and International Exposure. The simulated MSCI World Small Cap with Domestic Exposure Index had a positive tilt to leverage and a negative tilt to volatility factor during the back test period. The index was overweight Financials and Utilities sectors and underweight Information Technology, Materials and Industrials sectors, in direct contrast with its international counterpart. In particular, financial companies accounted for nearly 37% by weight in the simulated MSCI World Small Cap with Domestic Exposure Index whereas Information Technology accounted for nearly 23% by weight in the simulated MSCI World Small Cap with International Exposure Index, and were significant contributors to performance of these indices.

## Conclusion

With increasing globalization and the integration of supply chains across the world, many small cap companies are growing their revenues outside their home country. Concurrently, the global small cap universe itself has expanded significantly over the last decade. An increase in institutional small cap mandates is driving more asset managers to adopt a globally integrated research process that leverages a broad opportunity set while reducing a long standing home country bias through global sector based approaches to portfolio management.

In this context, understanding the geographic distribution of a company's revenues can significantly enhance the investment decision processes for constructing and managing global portfolios. **The** recently launched **MSCI Economic Exposure Security Data modules** apply a consistent and transparent approach to estimate the economic exposure of a broad and comprehensive opportunity set of large, mid and small cap companies across developed, emerging and frontier markets using the geographic distribution of a firm's revenues.

Our analysis of the economic exposures of typical small cap mandates highlights that nearly 30% of the developed markets small cap universe and nearly 22% of the emerging markets small cap universe derive more than half their revenues from international markets. We also highlight that economic exposure may be a significant driver of risk and performance characteristics of small cap companies.

Economic exposure data can potentially support multiple needs of asset owners, asset managers, broker-dealers and risk managers in the investment process: in the analysis of the exposure of investment mandates, in active portfolio construction, passive product creation and in risk management.

## References

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<sup>1</sup> As of September 30, 2012, as published by eVestment, Lipper and Bloomberg on January 31, 2013