

Global Market Report

The Mid Cap Effect

Oleg Ruban, Zoltán Nagy and Jose MencheroOleg.Ruban@msci.comZoltan.Nagy@msci.comJose.Menchero@msci.com

December 2012

What Makes Mid Caps Unique?

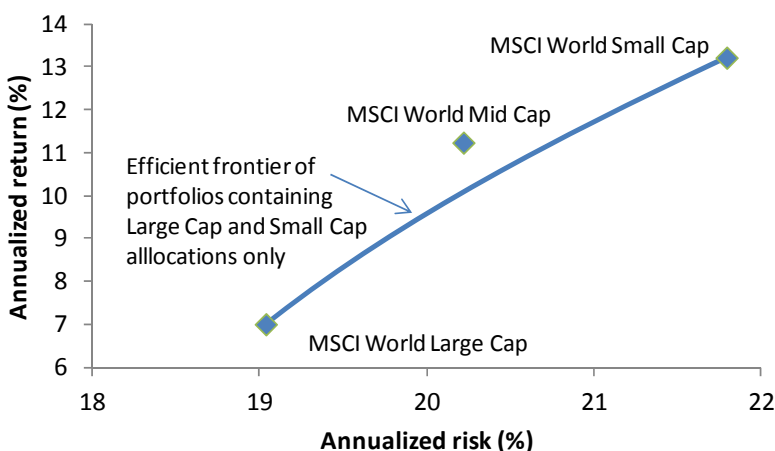
Mid cap stocks populate the middle of the capitalization spectrum of each market. An accepted rule of thumb defines US mid caps as stocks with market capitalizations between USD 2bn and USD 10bn; however, this is not the most appropriate definition globally. By contrast, MSCI Mid Cap Indices target the middle 15 percent of each market's float-adjusted market capitalization.¹ Mid cap stocks are often under-represented in investor portfolios² and can offer a distinct set of potential benefits—the higher growth potential of smaller companies with the strength and stability offered by large cap companies.

Figure 1 illustrates that the MSCI World Mid Cap Index lies above the efficient frontier of portfolios containing allocations to MSCI World Large Cap and MSCI World Small Cap Indices during the period from October 2008 to October 2012. This means that a portfolio containing a global mid cap allocation would have achieved higher risk adjusted returns over the last four years, relative to a portfolio invested only in global large cap and small cap stocks.

¹ More specifically, MSCI Standard Indices cover all investable large and mid cap securities. They target approximately 85 percent of each market's free float adjusted market capitalization. MSCI Mid Cap Indices are part of the standard indices; they include all investable mid cap securities and target approximately 15 percent of each market's float-adjusted market capitalization.

² For example, see Mid Cap Stocks—Wall Street's Best Kept Secret, ING Investment Management White Paper, March 2010.

Figure 1: MSCI World Mid Cap index and the efficient frontier of portfolios containing allocations to global large cap and small cap stocks (October 2008-October 2012).



Note: Risk and return are measured in USD terms.

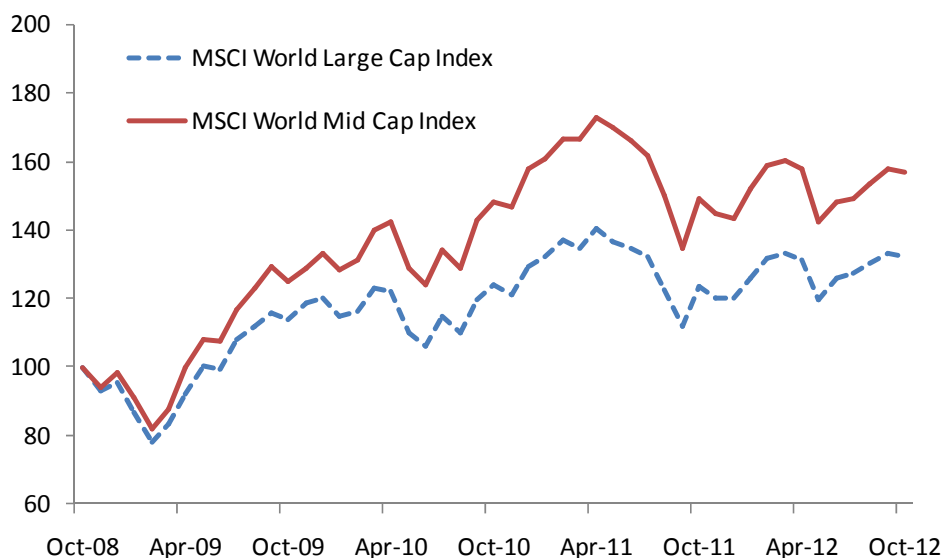
In recent weeks, some market observers have pointed to a number of recent global trends that have historically been supportive of mid cap performance. These trends include low interest rates, decreasing investor risk aversion, significant amounts of cash on the balance sheets of large companies, and well-funded private equity firms.³ In this environment, mid caps provide security of principal relative to small caps, but better growth prospects relative to large caps. As pointed out by *Principal Global Equities* last month mid cap stocks have tended to be prime targets for acquisition by deep-pocketed large cap companies and often command take out premiums.⁴

Figure 2 illustrates the performance of MSCI World Large Cap and MSCI World Mid Cap Indices since the financial crisis of 2008. We see that both large and mid cap stocks have recovered substantially from their lows in March 2009; at the same time, we also observe that mid cap stocks have significantly outperformed large caps.

³ See <http://seekingalpha.com/article/999121-the-case-for-small-and-mid-cap-stocks-in-2013>.

⁴ The Best of Both Worlds: Opportunities in U.S. Mid-Cap Equities, *Principal Global Equities*, November 2012.

Figure 2: Performance of global large cap and mid cap equities since October 2008 (in USD).



Modeling the Mid Cap Effect

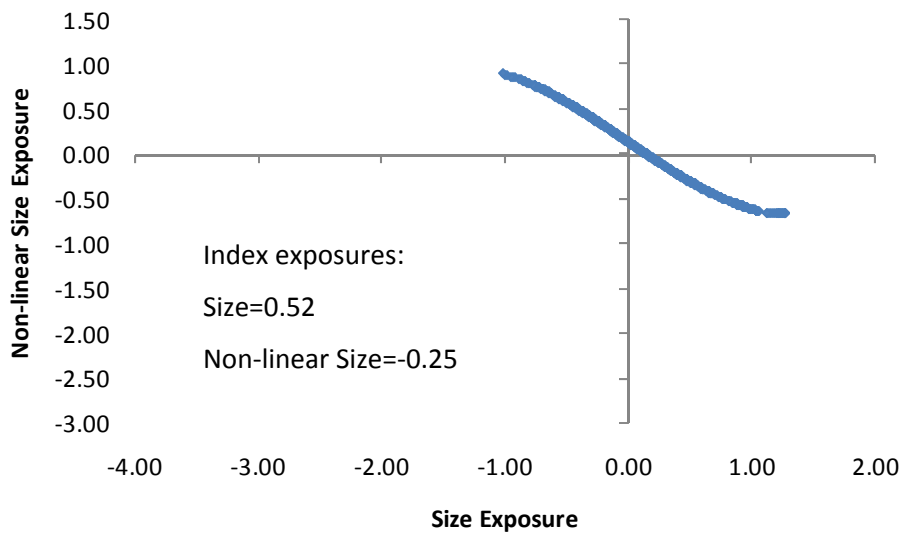
To account for the unique characteristics of mid cap stocks, the Barra Equity models typically include a style factor called Non-linear Size. This factor provides an additional dimension to the size profile of a company. A detailed description of the calculation of Non-linear Size factor exposure and the estimation of its return is given in the Barra Global Equity Model (GEM2) Research Notes.

Figure 3 illustrates how stocks in MSCI World Large Cap, Mid Cap and Small Cap Indices project on the exposures to Size and Non-linear Size factors as of November 26, 2012. While there is some overlap between Indices, we see that large cap stocks tend to have a positive exposure to Size and a negative exposure to Non-linear Size on this date. As we move into the mid cap segment, stocks tend to have a positive exposure to Non-linear Size and a negative exposure to Size on this date. Small cap stocks span both positive and negative exposures to Non-linear Size and have a negative exposure to Size on this date. Index level exposures confirm on this date that the combination of mildly negative Size exposure and positive Non-linear Size exposure picks up the performance associated with the mid cap segment.

It is also worth noting a more technical point: the regression in the GEM2 model is weighted by the square root of market capitalization. Therefore, regression weights give more prominence to large cap stocks. This, in turn, implies that the return of the Non-linear Size factor can be intuitively interpreted as capturing the return difference between the mid cap stocks and the overall market, net of all other factors in the model.

Figure 3: Size and Non-linear Size exposures by MSCI index (November 26, 2012).

MSCI World Large Cap



MSCI World Mid Cap

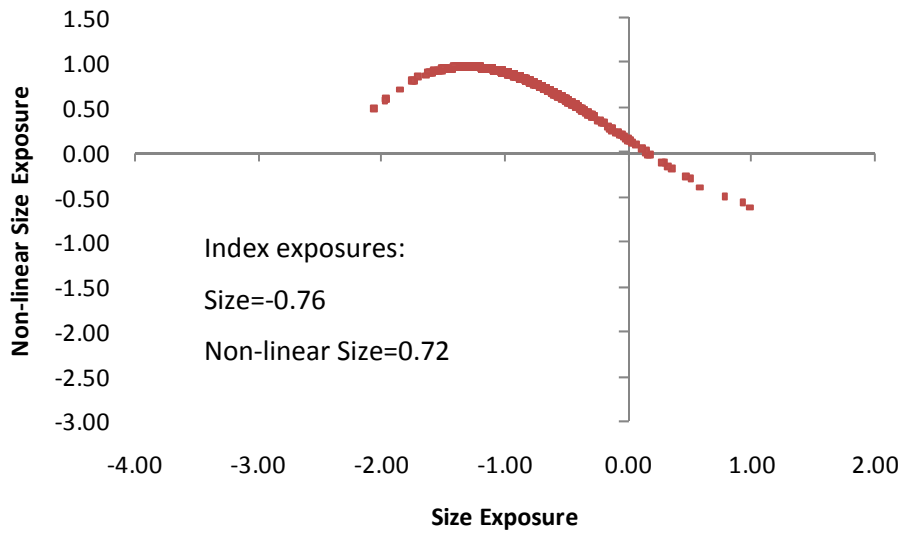


Figure 3: Continued.

MSCI World Small Cap

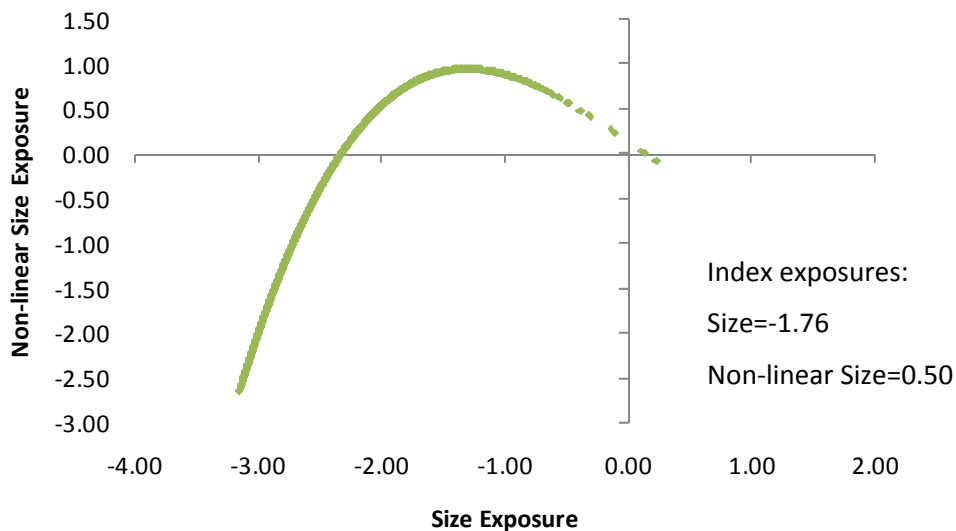
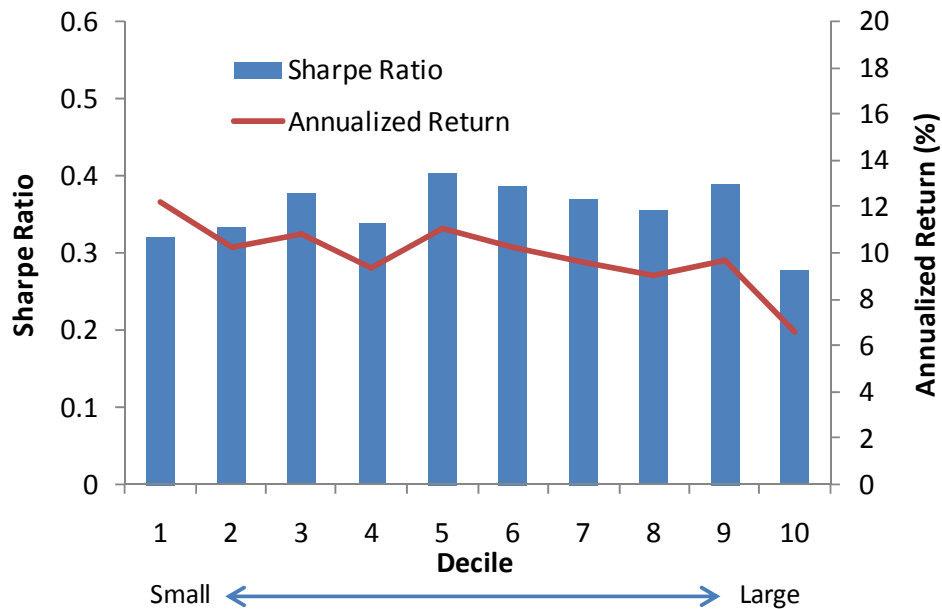


Figure 4 presents evidence of non-linear returns to firm size as observed in equities. To create this plot, we split the MSCI ACWI IMI Index into 10 decile portfolios, using exposure to the GEM2 Size factor. These portfolios are rebalanced monthly and their risk and returns are calculated for the four year period of October 2008—October 2012. Although small caps outperformed large caps during this period, the outperformance has not been linear. In fact, on the basis of risk adjusted returns, the middle deciles showed the best performance during this period.

Figure 4: Performance of size decile portfolios (October 2008 – October 2012).



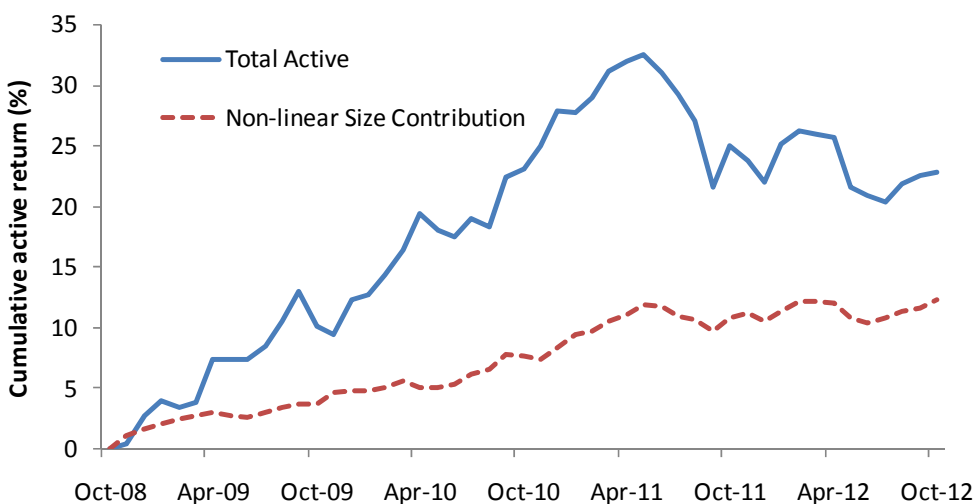
Further evidence of the importance of the mid cap effect is illustrated in Table 1 and Figure 5. During the four years since the financial crisis, the Non-linear Size factor had the second best risk-adjusted performance of all the style factors in the GEM2 model, eclipsed only by Value.

Table 1: Performance of global style factors, October 2008-October 2012.

	Cumulative return	Annualized return	Annualized volatility	Sharpe Ratio
Value	18.47	4.24	1.88	2.25
Non-linear Size	7.17	1.71	1.18	1.45
Growth	3.58	0.86	1.06	0.82
Volatility	-0.14	-0.03	7.42	0.00
Momentum	-1.96	-0.48	5.39	-0.09
Size	-0.95	-0.23	1.44	-0.16
Leverage	-2.97	-0.74	1.80	-0.41
Liquidity	-3.09	-0.77	1.11	-0.69

Figure 5 shows the cumulative active return of MSCI World Mid Cap against MSCI World Large Cap from October 2008-October 2012. We see that global mid caps outperformed large caps by 23 percent during this period. The Non-linear Size factor contributed roughly 12 percent to this performance.

Figure 5: Cumulative active performance of MSCI World Mid Cap benchmarked to MSCI World Large Cap.



Conclusion

Banz (1981) was the first to document the so-called size or small-firm effect. He illustrated that average annual returns are consistently higher on portfolios of small cap firms relative to large cap firms in the US market. Subsequently, his findings were confirmed for other markets.

In this report we illustrated how in recent years the relationship between the firm's size and its returns has been richer than the linear structure proposed by Banz. Mid cap stocks have a unique blend of characteristics of both large and small capitalization companies during the observed period. They have offered impressive risk-adjusted performance during the last four years.

The global mid cap effect is captured in the Barra Global Equity model (GEM2) through the Non-linear Size factor. We have seen this factor during the observed period capturing the return difference between mid cap stocks and the overall market, net of the other factors. Mid cap stocks have tended to have a positive exposure to Non-linear Size and a negative exposure to the Size factor during this period. We have shown that since the global financial crisis of 2008, the impressive performance of global mid caps was attributed to, in large part, their exposure to Non-linear Size. Monitoring the exposure to this factor may provide investors with a fresh view of the mid cap effect in their portfolios.

References

Banz, R., 1981. "The Relationship between Return and Market Value of Common Stock," Journal of Financial Economics, vol. 9: 3-18.

Menchero, J., Morozov, A. and P. Shepard, 2008. "The Barra Global Equity Model (GEM2) Research Notes," MSCI White Paper.

Client Service Information is Available 24 Hours a Day

clientservice@msci.com

Americas

Americas	1.888.588.4567 (toll free)
Atlanta	+ 1.404.551.3212
Boston	+ 1.617.532.0920
Chicago	+ 1.312.675.0545
Montreal	+ 1.514.847.7506
Monterrey	+ 52.81.1253.4020
New York	+ 1.212.804.3901
San Francisco	+ 1.415.836.8800
Sao Paulo	+ 55.11.3706.1360
Stamford	+ 1.203.325.5630
Toronto	+ 1.416.628.1007

Europe, Middle East & Africa

Amsterdam	+ 31.20.462.1382
Cape Town	+ 27.21.673.0100
Frankfurt	+ 49.69.133.859.00
Geneva	+ 41.22.817.9777
London	+ 44.20.7618.2222
Madrid	+ 34.91.700.7275
Milan	+ 39.02.5849.0415
Paris	0800.91.59.17 (toll free)
Zurich	+ 41.44.220.9300

Asia Pacific

China North	10800.852.1032 (toll free)
China South	10800.152.1032 (toll free)
Hong Kong	+ 852.2844.9333
Seoul	+ 827.0768.88984
Singapore	800.852.3749 (toll free)
Sydney	+ 61.2.9033.9333
Tokyo	+ 81.3.5226.8222

Notice and Disclaimer

- This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the "Information") is the property of MSCI Inc., its subsidiaries (including without limitation Barra, Inc. and the RiskMetrics Group, Inc.) and/or their subsidiaries (including without limitation the FEA, ISS, and CFRA companies) (alone or with one or more of them, "MSCI"), or their direct or indirect suppliers or any third party involved in the making or compiling of the Information (collectively (including MSCI), the "MSCI Parties" or individually, an "MSCI Party"), as applicable, and is provided for informational purposes only. The Information may not be reproduced or disseminated in whole or in part without prior written permission from the applicable MSCI Party.
- The Information may not be used to verify or correct other data, to create indices, risk models or analytics, or in connection with issuing, offering, sponsoring, managing or marketing any securities, portfolios, financial products or other investment vehicles based on, linked to, tracking or otherwise derived from any MSCI products or data.
- Historical data and analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction.
- None of the Information constitutes an offer to sell (or a solicitation of an offer to buy), or a promotion or recommendation of, any security, financial product or other investment vehicle or any trading strategy, and none of the MSCI Parties endorses, approves or otherwise expresses any opinion regarding any issuer, securities, financial products or instruments or trading strategies. None of the Information, MSCI indices, models or other products or services is intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such.
- The user of the Information assumes the entire risk of any use it may make or permit to be made of the Information.
- NONE OF THE MSCI PARTIES MAKES ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION (OR THE RESULTS TO BE OBTAINED BY THE USE THEREOF), AND TO THE MAXIMUM EXTENT PERMITTED BY LAW, MSCI, ON ITS BEHALF AND ON THE BEHALF OF EACH MSCI PARTY, HEREBY EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES (INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF ORIGINALITY, ACCURACY, TIMELINESS, NON-INFRINGEMENT, COMPLETENESS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY OF THE INFORMATION.
- Without limiting any of the foregoing and to the maximum extent permitted by law, in no event shall any of the MSCI Parties have any liability regarding any of the Information for any direct, indirect, special, punitive, consequential (including lost profits) or any other damages even if notified of the possibility of such damages. The foregoing shall not exclude or limit any liability that may not by applicable law be excluded or limited, including without limitation (as applicable), any liability for death or personal injury to the extent that such injury results from the negligence or willful default of itself, its servants, agents or sub-contractors.
- Any use of or access to products, services or information of MSCI requires a license from MSCI. MSCI, Barra, RiskMetrics, ISS, CFRA, FEA, EAFE, Aegis, Cosmos, BarraOne, and all other MSCI product names are the trademarks, registered trademarks, or service marks of MSCI in the United States and other jurisdictions. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and Standard & Poor's. "Global Industry Classification Standard (GICS)" is a service mark of MSCI and Standard & Poor's.

About MSCI

MSCI Inc. is a leading provider of investment decision support tools to investors globally, including asset managers, banks, hedge funds and pension funds. MSCI products and services include indices, portfolio risk and performance analytics, and governance tools.

The company's flagship product offerings are: the MSCI indices with approximately USD 7 trillion estimated to be benchmarked to them on a worldwide basis¹; 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.

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