Why Small Is Still Beautiful

Global Small Cap Broadens Opportunity

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Small companies have several characteristics which should make them attractive to investors. They have the ability to grow at a faster rate than large companies and their management's interests are more closely aligned with shareholder interests.

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We believe there is a size value premium in the market. Sponsors investing in global small caps can diversify their alpha sources and broaden their opportunity set in the global arena. This area of the market provides for great opportunity given that there are a limited number of managers with global small cap skills and the market is not well-researched. In our opinion, a global equity small cap allocation is a leading edge strategy for institutional investors to consider in building superior non-domestic allocations.

This research paper reviews the evidence on the small cap effect and discusses its implications for building better global portfolios.

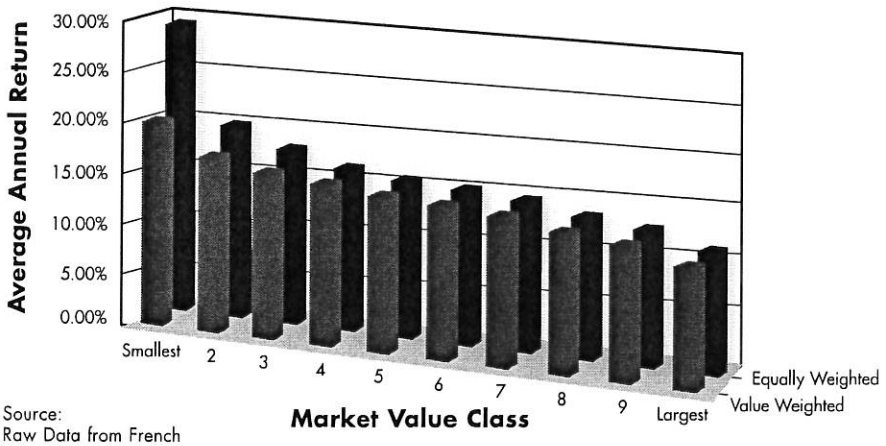
The Small Cap Effect: Global Phenomena

Recognition of the small cap effect dates back to 1981 in a pioneering research article by Professor Rolf Banz entitled "The Relationship Between Return and Market Value of Common Stocks."[2] Professor Banz uncovered the "size effect," pointing out that over a 40 year period "smaller firms had higher risk-adjusted returns, on average, than larger firms" listed on the NYSE.[3] *Exhibit 1* summarizes the small cap effect in the U.S. over the past 74 years, sorting stocks into 10 market value buckets. The smallest stocks earned 20 per cent on average, while the largest stocks returned only 12 per cent on average. *Exhibit 2* examines the size effect on a country-by-country basis. While the time periods of analysis and market definitions of small cap

Exhibit 1

The Size Effect In The U.S.

Annual Returns By Market Value Class: 1927-2001



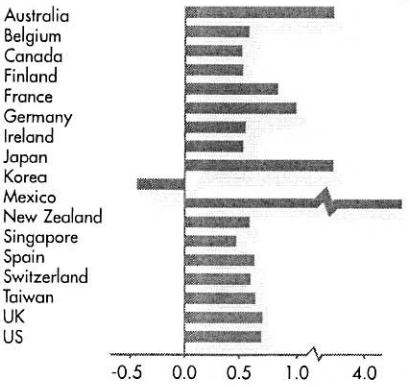
Source:
Raw Data from French

Chart Source: Investment Philosophies, Successful Strategies and the Investors Who Made Them Work, written by Aswath Damodaran, published by John Wiley & Sons, Inc, 2003, Chapter 9, The Allure of Growth: Small Cap and Growth Investing, Page 271, Figure 9.1

Exhibit 2

The Size Effect Around The World

The Size Effect: International Evidence. (Size Premium = $\bar{R}_{Small} - \bar{R}_{Large}$)



	Monthly Size Premium (%)	Test Period	Number of Portfolios	Largest Size/ Smallest Size
Australia	1.21	1958-81	10	NA
Belgium	0.52	1969-83	5	188
Canada	0.44	1973-80	5	67
Finland	0.76	1970-81	10	133
France	0.90	1977-88	5	NA
Germany	0.49	1954-90	9	NA
Ireland	0.47	1977-86	5	NA
Japan	1.20	1965-87	10	NA
Korea	-0.40	1984-88	10	62
Mexico	4.16	1982-87	6	37
New Zealand	0.51	1977-84	5	60
Singapore	0.41	1975-85	3	23
Spain	0.56	1963-82	10	228
Switzerland	0.52	1973-88	6	99
Taiwan	0.57	1979-86	5	17
UK	0.61	1973-92	10	182
US	0.61	1951-94	10	490

Chart Source : Security Market Imperfections in World Wide Equity Markets, published by Cambridge University Press, 2000, Part 1, The Cross Section of Common Stock Returns: A Review of the Evidence and Some New Findings, by Gabriel Hawawini and Donald B. Keim, Page 11, Table 2.

may differ, the evidence is still very compelling in support of a global small cap premium.

Some Common Sense Reasons ... from a Practitioner's Perspective

Given the strength of the evidence of a small cap effect, practitioners offered a number of reasons for its existence. A recent consultant research paper proposed some common sense reasons behind the small cap effect, including:[4]

- Small companies have the ability to grow at a faster rate than large companies
- Management stakes and ownership are higher in small companies so management's interests are more closely aligned with shareholders interests
- Small cap stocks are under-researched and tend to be undervalued using traditional financial ratios
- These companies are more vulnerable to mergers and acquisitions which could entail a takeover premium
- Small firms are riskier and hence should provide higher returns in the long run

Murphy's Law Runs Afoul Again

Common sense also indicates that the opportunity for a free lunch doesn't last long. As the discovery and acceptance of any market anomaly becomes widely known, one can argue that Murphy's Law will come into play and the said inefficiency will disappear as investors attempt to take advantage of the opportunity. Such appeared to be the case for the small cap effect premium, which turned negative in the 1990s.[5]

Examining the small size premium over an extended period of time supports the global capital market lesson – there can be long periods of time during which the market does not reward small cap stocks.

Fortunately, for small cap premium believers, *Exhibit 3* reveals that the tide turned in late 1999 with the premium roaring back recently.[6]

Further analysis of *Exhibit 3* suggests:

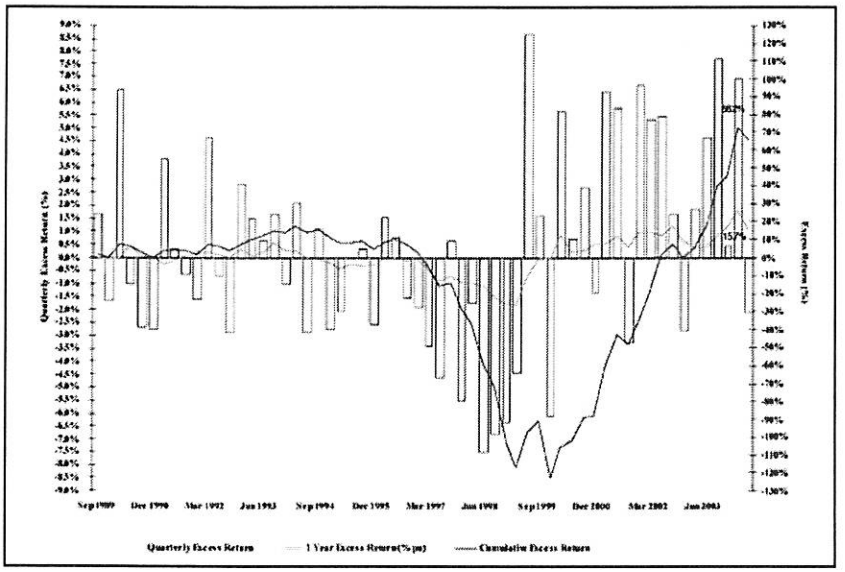
- During the first half of the 1990s, the performance differential between small and large caps 'see-sawed' with no sustained trend
- In the latter half of the 1990s, smaller stocks significantly underperformed larger ones, finally bottoming in September 1999
- Since September 1999, the small size factor has again dominated
- Over the entire period of analysis, global small caps outperformed large caps by a cumulative 66 per cent or 1.3 per cent annualized

Exhibit 3

Excess Return on A Quarterly & Rolling One Year Basis

S&P/Citigroup Global <2 Billion

Excess Return in Pooled - Global Equities from Sep 1989 to Jun 2004 Cit<2B versus MS-WORLD (before fees)



One More Look at Why We Have a Small Cap Effect

In a separate piece of research, one of the leading small cap research analysts, Marc Reinganum, noted "a small cap company is about 100 times more likely than a large cap company to triple in value in a given year."[7] What drives the small cap effect?

Since Banz's article, the small cap

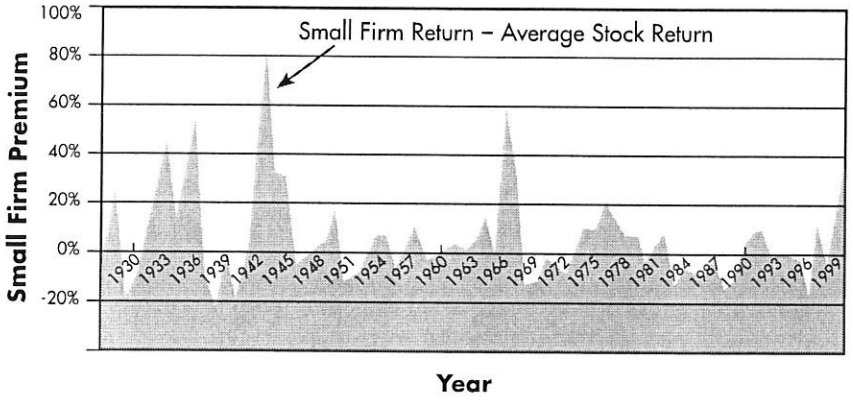
effect has been subject to an enormous amount of academic research and debate. What follows is the best of the academics' rationale for the phenomenon.[8]

Seasonal Effect[9]

Many research papers have correlated the size of premium with the turn of the year or "January effect."[10] In this case, a significant proportion of the small cap premium occurs in January as shown in *Exhibit 5*. Tax loss selling and window dressing by portfolio managers have been two of the main reasons offered for this turn-of-the-year effect.

Exhibit 4

Small Firm Premium Over Time : 1927 - 2001



Source : Raw Data from French

Chart Source : Investment Philosophies, Successful Strategies and the Investors Who Made Them Work, written by Aswath Damodaran, published by John Wiley & Sons, Inc, 2003, Chapter 9, The Allure of Growth: Small Cap and Growth Investing, Page 272, Figure 9.2

Different Sector Economic Factors

Part of the rationale for the size effect may be attributable to the different sector economic exposures that are available in this market.[11] Currently, the small cap index has a significant underweighting relative to the global equity index in Telecommunications, Healthcare, Financials, Energy, and Consumer Staples. Sectors significantly overweighted are Materials, Industrials, and Consumer Discretionary.

Over time, the small cap index has tended to have an 'odd' mix of being underexposed to the new economy (Telecommunications and Healthcare), defensive stocks (Consumer Staples), and the commodity cycle (Energy) while being overweighted in the 'old economy' (Industrials and Materials and Consumer Discretionary). As well, the small cap index has had an "up and down" relationship with Financials and Technology. Hence, an investment in the small cap index provides for different sector and economic exposures than the global equity index which could account for the size effect.

Value Factor?

The small cap effect has often been described as an "anomaly" since researchers have difficulty explaining it within the traditional capital asset pricing model for securities.[12] In trying to understand the pricing of securities, the empirical evidence points to a link between the small cap effect and value,[13] meaning small cap value strategies provide for excess returns. The evidence to this point indicates that it is very difficult to disentangle these two effects (small cap and value).[14]

Perhaps the market is paying for small-size value company risk factors because they tend to have higher relative distress and less profitability than large cap growth stocks.[15] Others have also suggested that low price-to-book stocks have higher expected returns (higher costs of capital) because their earnings prospects are weak.[16]

From a practical perspective, small companies have traditionally traded at a discount to large companies using traditional value criteria, such as price-to-book and price-to-cash flow, while providing for a higher average yield.[17] On a relative P/E basis, the small cap index is about flat with the world index, when the two extreme observations (September 2000 and September 2002) are excluded.

Perspectives from the World of Behavioral Finance

From a behavioural finance perspective, the rewards for investing in small cap value can be attributable to 'irrational' investor behaviour,[18] biased decision-making, overconfidence, and over-/

under-reaction to corporate news.[19] So rather than believe that small cap stocks are fundamentally riskier, their view is that the market is simply inefficient!

The 'Neglected Firm' Effect

The neglected firm effect suggests that the size effect is a result of institutional investors' lack of interest in small cap stocks.[20] Hence, these stocks are under-researched and consequently display value characteristics. *Exhibit 6* displays the average number of analysts that cover stocks dichotomized by market capitalization. As depicted in the exhibit, analyst coverage drops off dramatically as capitalization falls.

This approach helps to explain why small cap stocks are often associated with value factors – neglected stocks are undervalued due to the lack of professional analysis. Often the only source of information regarding these firms is the firm itself.[21]

Liquidity Premium

One could argue that market structure is the source of the size premium.[22] Smaller cap stocks are often less liquid than large cap stocks, resulting in a liquidity premium.[23]

Monetary policy may also affect the small cap cycle. If investors require an additional risk premium for distressed firms, because they are more likely to fail in adverse economic conditions,[24] it follows that the premiums will be realized during an expansive monetary regime.

Others have suggested that small caps outperform when the yield curve is downward sloping, inflation is high, and/or default spreads are narrow.[25]

Explaining Stock Returns and Building Better Portfolios

Thanks to the pioneering work of Professors Eugene Fama and Kenneth French, a strong empirical case can be made to explain stock returns by a three-factor model consisting of market, style, and size.[26] In this model, risk is multi-dimensional with average returns related to a stock's sensitivity to:

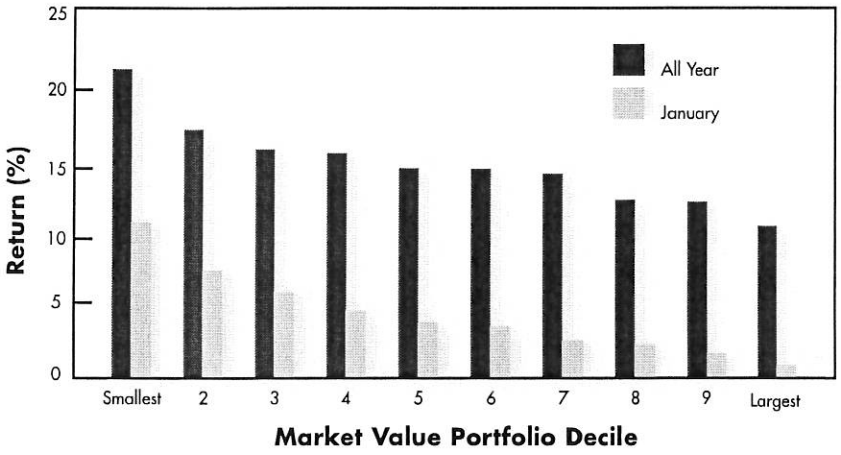
- Excess market return (market factor)
- Market capitalization – the difference in return between a portfolio made up of small cap stocks versus large cap stocks (size factor)
- Investment style – the difference in return between a portfolio made up of value stocks versus growth stocks (style factor)

This multi-factor model has been demonstrated to hold true on a global basis.[27] Consequently, when building efficient and effective global portfolios, investors must pay attention to the value/growth bet and the size factor.

Exhibit 5

Seasonality May Have A Role

January And Entire-year Average Returns, 1926-95



Source : Marc R Reinganum, The Size Effect: Evidence & Potential Explanations, Page 49 in Investing in Small-Cap & Micro-Cap Securities, AIMR, 1997

Portfolio Structure Implications

Canadian institutional investors have typically structured their non-domestic portfolios as either a decision between EAFE and U.S. equities or global equities. If the former allocation is selected, an investor with sizeable assets might also consider a small cap manager, but usually only for U.S. equities. If global equities are selected, a small cap allocation is not typically considered.

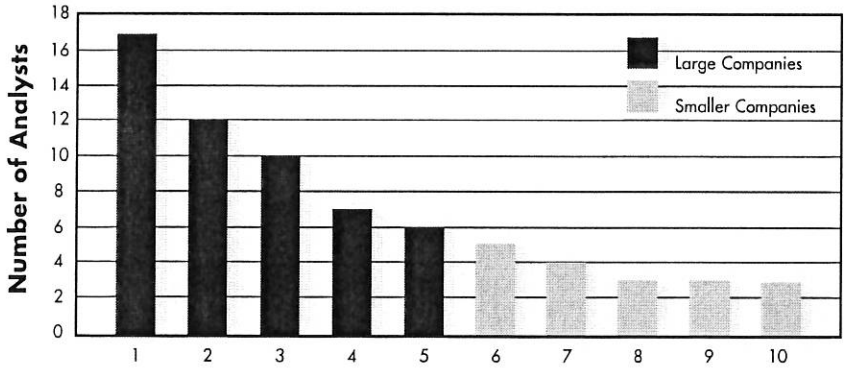
This "neglect" of global/international small cap lends further support for the rationale that a small size-value effect exists. Anecdotally, when a prominent consultant was recently asked by a

client to consider global small cap, the consultant replied, "there are only five or six really good managers to consider."

In our opinion, a global equity small cap allocation is a leading edge strategy for institutional investors to consider. Money managers, sponsors, and consultants have only recently begun exploring the possibilities of this less conventional route.

Exhibit 6

Small Companies Are Under-Researched



Source: Factset

Our research suggests that institutional investors are missing out on one of the markets' few 'free lunches' by not investing in small cap on either a global or international basis. A small cap allocation makes good investment sense for a variety of reasons, including:

- Leveraging the size value premium in the market
- Providing for alpha diversification on a global basis
- Broadening one opportunity set for sponsors
- Offering greater potential as it is currently under-researched

Based on historical market cap averages, a 15 per cent to 20 per cent global small cap allocation would be prudent. Investors should review their allocation at least annually to rebalance back to market weights. ❖

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1. The title for this article was inspired by a research paper with the same title written by Stan Beckers and Greg Vaughan, Journal of Portfolio Management, Summer 2001. Beckers and Vaughan make the case for small cap investing. The purpose of this article is to carry that torch forward in support of global small cap investing from a Canadian investor's perspective.

2. Rolf Banz, "The Relationship Between Return and Market Value of Common Stocks," Journal of Financial Economics, pages 3-18, 1981

3. Ibid, page 3

4. "Small Caps: Big Returns?," Mercer Investment Consulting, Discussion Paper Series No. 16, June 2002

5. Elroy Dimson, Paul Marsh, and Mike Staunton make this case in their outstanding book reviewing capital markets entitled "Triumph of the Optimists," Chapter 9, Princeton University Press, and Princeton, NJ, 2002. As well, Dimson and Marsh make their case in "Murphy's Law and Market Anomalies," Journal of Portfolio Management, Winter 1999, pages 53 - 69.

6. Dimson and Marsh appropriately dichotomize between the "size premium and the size effect" pointing out that the latter refers to the tendency for small caps to perform differently than large caps. See page 65 in "Murphy's Law and Market Anomalies," Journal of Portfolio Management, Winter 1999, pages 53 - 69.

7. From "The Size Effect: Evidence and Potential Explanations in Investing in Small-Cap and Microcap Securities," IFCA Continuing Education, AIMR, 1997, page 50

8. The next section draws on "The Size Effect: Investing in Small-Cap and Microcap Securities," IFCA Continuing Education, AIMR, 1997

9. The seasonal effect as an explaining factor for the size effect is challenged in Investments, by Z. Bodie, A Kane, and A Marcus, page 380, Irwin Profession Publishing, Second Edition, 1993

10. The seasonal effect was first documented by Donald Kerm in "Size Related Anomalies and Stock Return Seasonality: Further Empirical Evidence," Journal of Financial Economics, 12 pages 13 - 32

11. This is discussed in more detail, pages 62 - 63 of "Murphy's Law and Market Anomalies," by Dimson and Marsh

12. Jonathan Berk takes up the flag that the size anomaly is mislabeled. Berk argues that size-related anomalies should be observed in the market. The size effect should be expected because it is a result of having stocks with different market values and different discount factor (the larger (smaller) the stock the lower (higher) the discount factor once market value is controlled for). For further discussion, see "A Critique of Size-Related Anomalies," The Review of Financial Studies, 1995, Vol. 8, No. 2, pages 275 - 286

13. Fama and French discuss the size value linkage in "Multifactor Explanations of Asset Pricing Anomalies," Journal of Finance, March 1996, pages 55 - 84

14. This is discussed in more detail in Section 5 of "The Cross Section of Common Stock Returns: A Review of the Evidence and Some New Findings," by G. Hawawini and D. Keim, in Security Market Imperfections in World Wide Equity Markets, edited by D. Keim and W. Ziemba, Cambridge University Press, Cambridge U.K., 2000

15. See "Size and Book to market Factors in Earnings and Returns," by Eugene Fama and Kenneth French, The Journal of Finance, March 1995, pages 131 - 155

16. See K. C. Chan and N. Chen in "Structural and Return Characteristics of Small and Large Firms," Journal of Finance, September 1991, pages 1467 - 1484

17. The relationship between size and price to book has been economically explained as the excess return required for small firms that are distressed. The performance and survival of these stocks is sensitive to business conditions and is an added risk factor for these stocks. Dick Michaud argues that there are seven possible alternative reasons for challenging the relationship between size and value including misestimated risk, methodological errors, data snooping, size misinterpretations: attribute sorted portfolio issues, econometric limitations, and procedural problems magnifying returns. For a complete discussion please refer to "Investment Styles, Market Anomalies and Global Stock Selection," The Research Foundation of the Institute of Chartered Financial Analysts, 1999.

18. The behavioural approach is discussed in more detail in "Contrarian Investment, Extrapolation and Risk," by Josef Lakonishok, Andrei Shleifer and Robert Vishny, Journal of Finance, December 1994, pages 1541-1578

19. These investor mistakes are summarized in "Anomalies and Efficient Portfolio Formation," by S. Kothari and J. Shanken, The Research Foundation of AIMR, 2002

20. This rationale was first proposed by Avner Arbel and Paul Strebel, in "Pay Attention to Neglected Firms," Journal of Portfolio Management, Winter 1983

21. A. Damodaran calls this information risk. See page 275 of Investment Philosophies: Successful Strategies and the Investors Who Made them Work, John Wiley and Sons, Inc., NJ, 2003

22. See "Market Microstructure and Asset Pricing: An Empirical Investigation of NYSE and NASDAQ Securities," Journal of Financial Economics, #28, 1990, pages 127 - 148

23. Of course, the cup can be half empty as one can argue that by taking transaction costs into account the small cap premium will be reduced. This point is raised by A. Damodaran, page 275, in Investment Philosophies: Successful Strategies and the Investors Who Made them Work, John Wiley and Sons, Inc., NJ, 2003

24. From "New Evidence on Size and Price to Book Effects in Stock Returns," by Gerald Jensen, Robert Johnson & Jeffrey Mercer, Financial Analysts Journal, November/December 1997, pages 34 - 42

25. This is discussed in more detail in Small Cap Dynamics, by S. Pradhuman, Bloomberg Press, 2000

26. The pioneering work on this topic has been led by Eugene Fama and Kenneth French, "The Cross-Section of Expected Stock Returns," Journal of Finance, June 1992, pages 427 - 465

27. See "Multifactor Asset Pricing Analysis of International Value Investment Strategies," by B. Arshanapalli, T. D. Coggina and J. Donkas, in The Journal of Portfolio Management, Volume 24, Number 4, Summer 1998, pages 10 - 23