

Global Small Caps

Defining a promising sub-asset class

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AUGUST 30, 2012

Important information

⌋ Please remember that all investments carry some level of risk, including the potential loss of principal invested. They do not typically grow at an even rate of return and may experience negative growth. As with any type of portfolio structuring, attempting to reduce risk and increase return could, at certain times, unintentionally reduce returns.

⌋ Diversification and strategic asset allocation do not assure profit or protect against loss in declining markets.

⌋ Investments in emerging or developing markets involve exposure to economic structures that are generally less diverse and mature, and to political systems which can be expected to have less stability than those of more developed countries. Securities may be less liquid and more volatile than US and longer-established non-US markets.

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⌋ First used: June 2010

⌋ USI-7194-06-11

Strategies for managing volatility

Primary Cost

1. **Strategically de-risk**
e.g. less equity

Lower $E(r)^*$

2. **Diversify**
e.g. Global Small Caps

Residual tail risk

3. **Change *flavor***
e.g. Defensive Equity, Low volatility

Basis risk

4. **Change *shape***
e.g. Options / non-delta 1 Strategies

Premium or
Forgone upside

5. **Vary exposure**
e.g. Volatility Responsive Asset Allocation (VRAA)

Timing risk

Please remember that all investments carry some level of risk. Although steps can be taken to help reduce risk it cannot be completely removed.
* $E(r)$ = Expected Return

Agenda

Background

Defining global small caps:

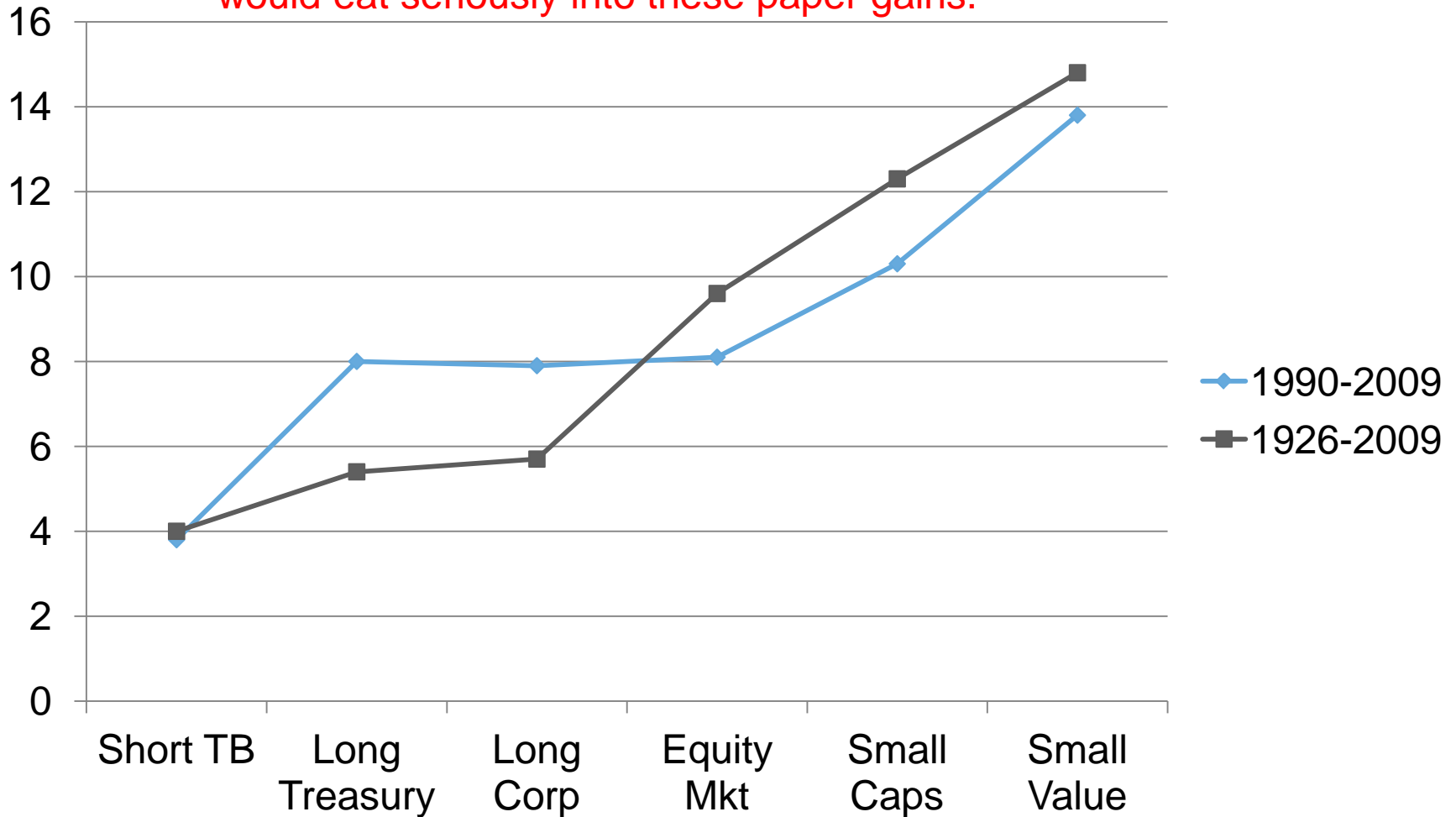
- › The too often overlooked asset class – why?
- › Contributing factors:
 - › Diversification
 - › U.S. and Non-U.S. small cap
- › Risks and Reward:
 - › Liquidity
 - › Performance
- › Differences among index providers

Implementation

Compound Return of US Asset Classes

Source: "Expected Returns" by Antti Ilmanen 2011

Warning: The numbers exclude costs. Incorporating trading costs would eat seriously into these paper gains.



Health Warning:

Source: “Expected Returns” by Anti Ilmanen 2011

- › “P17. We should humbly recognize the limits of our understanding. **Realized returns are dominated by randomness, structural uncertainty, and rare events.** Expected returns are unobservable, at best estimated with noise. We should resist hindsight biases wired in us – the outcomes that materialized seem more inevitable or predictable than they truly were. It is worth recalling that experts can only explain a fraction of realized return variation afterwards, and this is an inherently easier task than predicting. **Any observed predictability, is mild, possibly spurious and rarely robust.** Therefore I stress humility in interpreting empirical results and even more in making predictions and in trading based on them.”

Returns and Risk

As of March 31, 2012

	Annualized Rates of Return (C\$)						Annualized Standard Deviation	
	One Quarter	One Year	Three Years	Four Years	Five Years	Ten Years	Three Years	Five Years
S&P/TSX Composite	4.39	-9.76	15.59	1.08	1.65	7.22	16.35	19.83
S&P/TSX Small Cap Index	5.97	-15.05	26.35	2.50	0.27	5.22	23.48	27.06
BMO/Nesbitt Small Cap Index	7.55	-10.98	30.24	5.88	2.89	9.42	23.61	27.48
MSCI EAFE Index	8.93	-2.71	8.99	-3.86	-5.78	1.31	16.34	16.68
MSCI EAFE Small Cap	12.82	-3.32	15.33	-0.87	-5.21	5.28	19.85	20.62
Russell Global Index	10.28	1.85	13.44	0.35	-2.27	1.51	14.47	15.34
Russell Global Small Cap	11.67	-2.32	17.21	1.62	-2.17	4.51	17.58	18.42
Russell Emerging Markets Index	12.55	-6.14	17.79	0.81	2.17	8.78	21.02	22.86
Russell EM Small Cap	15.26	-7.36	20.75	0.75	1.28	9.13	25.41	26.39

- › Small cap beta presents greater opportunity for return but also greater volatility
- › Small cap volatility varies across geographies → case for global diversification
- › Small cap manager universe evolves given capacity constraints for optimal portfolio implementation → important to get in early before manager AUM bloats
- › Small cap alpha from managers focus on bottoms-up portfolio construction → less benchmark aware
- › Investment universe can deviate from larger cap space → ensure getting “pure” small cap exposure
- › Need sufficient breadth to allow style diversification

Correlation of Monthly Returns 2001-2011

	<i>RUSSELL 1000</i>	<i>RUSSELL 2000</i>	<i>MSCI World EX-U.S.</i>	<i>MSCI Emerging</i>	<i>MSCI World ex US Small Cap</i>	<i>S&P/TSX Composite</i>	<i>BMO Nesbitt Burns Cdn Small Cap Index</i>
<i>RUSSELL 1000</i>	1.00						
<i>RUSSELL 2000</i>	0.92	1.00					
<i>MSCI World EX-U.S.</i>	0.85	0.78	1.00				
<i>MSCI Emerging</i>	0.77	0.74	0.86	1.00			
<i>MSCI World ex US Small Cap</i>	0.74	0.76	0.92	0.83	1.00		
<i>S&P/TSX Composite</i>	0.78	0.72	0.86	0.87	0.80	1.00	
<i>BMO Cdn Small Cap Index</i>	0.75	0.76	0.82	0.86	0.87	0.91	1.00

“Volatile small cap stocks are the proverbial lottery tickets that may be systematically overpriced”

- › Several studies point in this direction and can largely explain away the volatility-return relationship:
 1. Frieder-Jiang (2008) –stocks with high recent upside volatility have significantly lower future returns;
 2. Bali-Cakici-Whitelaw (2010) –show that when stocks are sorted based on their highest daily return over the past month, the highest ranking portfolios underperform;
 3. Boyer-Mitton-Vorkink (2009) –ranked stocks based on their measure of expected skewness, found especially low returns for high skew portfolios;
 4. Moise (2007) –stock portfolios that have larger (negative) sensitivity to rising equity market volatility warrant higher long run returns. **Small cap value stocks have especially large negative volatility betas and earn an especially high volatility premium (0.5% per mo). Whereas large cap and growth stocks perform better when volatility spikes.**

Source: “Expected Returns” by Antti Ilmanen 2011 P380-383

Small cap stocks outperform most in inflationary and / or volatile stagnations and underperform in disinflationary or volatile booms”

Intersecting real activity & inflation dimensions

freq	regime	Stock Rror %	Small Cap Rror%	Value Stock Rror%
23%	Vol boom	0.83	0.79	1.59
28%	Vol stagn	-0.36	1.39	1.09
15%	Stable stagn	4.48	5.56	4.83
33%	Stable boom	2.73	3.77	4.46

Intersecting real activity & volatility dimensions

freq	regime	Stock Rror %	Small Cap Rror%	Value Stock Rror%
23%	Inflate boom	-0.46	1.16	2.00
17%	Inflate stagn	-0.26	1.68	1.05
26%	Disinfl stagn	2.36	3.59	3.27
34%	Disinfl boom	3.59	3.47	4.14

“Small cap stocks and value stocks outperform the equity markets in most regimes.” Expected Returns by Antti Illmanen (2011) P462-464

Reconstitution: Critical to reflecting changing economy

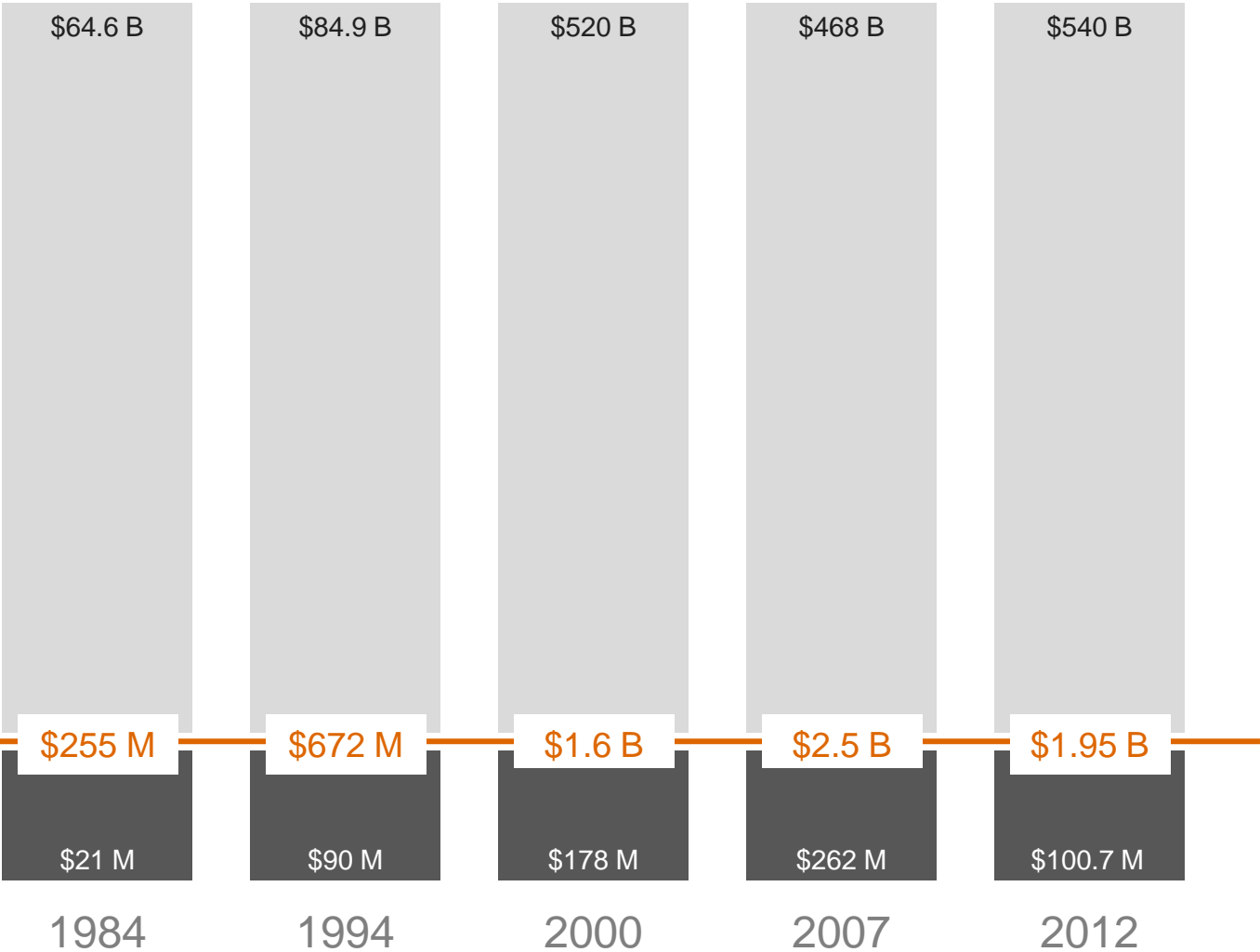
As of May 31 each year

Size segments

Large Cap 90%

Breakpoint

Small Cap 8%



Source: Russell Indexes. Russell 3000 Index

Large Cap

Russell
Global
ex US

Russell
Global
Large Cap
Index

Largest
\$540B
(Apple)

Wtd Avg
\$68B

Largest 98% of Global ex US
market cap

stocks become the Russell
Global

Largest 90% of Russell Global ex
US index

Stocks become the Russell
Global Large Cap Index

Next 10% of Russell Global ex
US Index

Stocks become the Russell
Global Large Cap Index

Microcap

Russell
Global
Small Cap

Largest \$2.6 B
Wtd Avg \$1.1 B

Global Markets Exploration

Source: Russell June 2010

Top 10 Developed Countries in Market Cap Rankings (\$US)

	Russell	Dev	SmallCap	Russell	Dev	LargeCap
Rank	Country	\$Tr	Weight %	Country	\$Tr	Weight %
1	USA	1.0	43.5%	USA	11	51.3%
2	Japan	0.4	17.6%	UK	2	9.2%
3	Canada	0.2	7.4%	Japan	2	8.9%
4	UK	0.2	7.2%	Canada	1	5.1%
5	Australia	0.1	4.1%	France	.9	4.2%
6	Hong Kong	0.1	2.8%	Switzerland	.8	3.9%
7	Singapore	0.1	1.9%	Germany	.7	3.4%
8	France	0.1	1.8%	Australia	.7	3.3%
9	Germany	0.1	1.7%	Spain	.3	1.6%
10	Sweden	0.1	1.6%	Italy	.3	1.3%

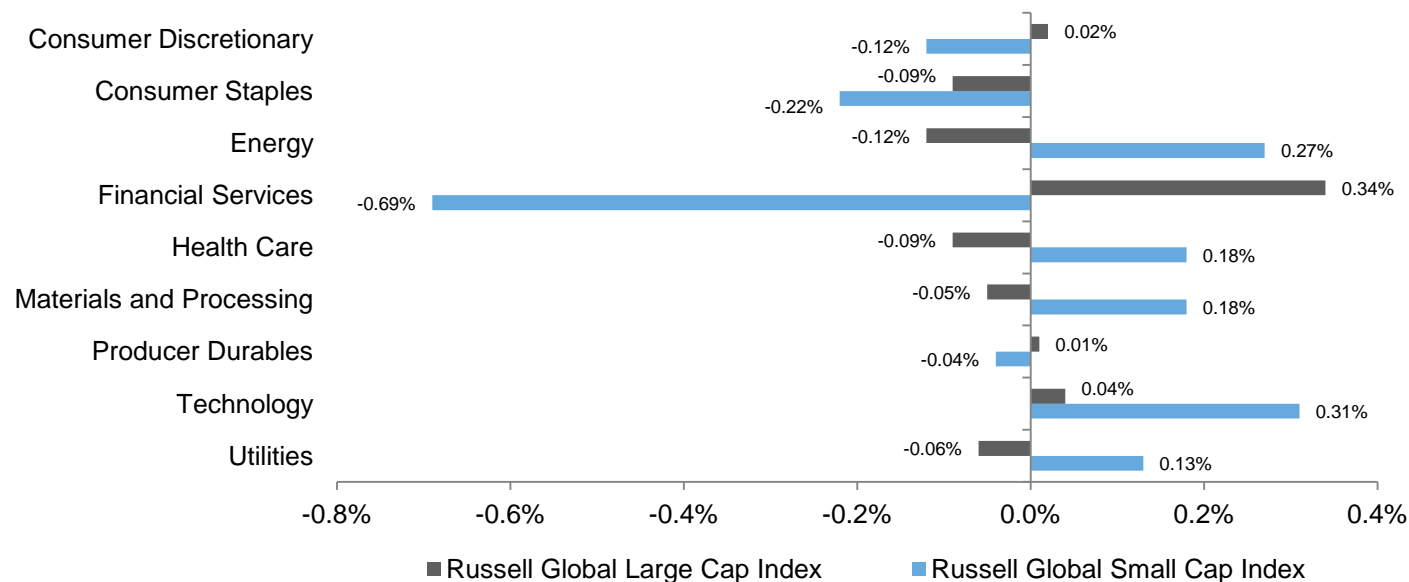
Global Markets Exploration

Source: Russell June 2010

Comparison of Sector Structure (\$US)

	May	2010	May	2005
Sector	Small Cap Index	Large Cap Index	Small Cap Index	Large Cap Index
Tech	11.8%	11.7%	9.9%	10.0%
Health	9.3%	9.7%	8.0%	11.2%
Cons Disc	16.4%	11.3%	21.3%	14.1%
Staples	4.6%	8.9%	3.9%	6.7%
Energy	5.4%	10.4%	4.9%	8.4%
Materials	12.8%	8.2%	16.8%	7.0%
Durables	16.9%	11.3%	12.5%	9.0%
Financials	19.9%	20.9%	19.3%	24.3%
Utilities	3.0%	7.5%	3.4%	9.3%

2012 Global Reconstitution – Shifts in sector weights



Russell Global Large Cap

- › Largest sectors
 - › Financial Services
 - › Consumer Discretionary
 - › Technology
- › Largest sector shifts
 - › Financial Services
 - › Energy
 - › Consumer Staples

Russell Global Small Cap

- › Largest sectors
 - › Financial Services
 - › Producer Durables
 - › Consumer Discretionary
 - › Materials
- › Largest sector shifts
 - › Financial Services
 - › Technology
 - › Energy

Data as of May 31, 2012

MSCI World Index Constituents by Market Cap

Source: MSCI December 2011

By Number of Securities

	MSCI USA	MSCI World ex USA	MSCI World
Large/MidCap	588	1,027	1,615
Small Cap	1,956	2,609	4,565
Total	2,544	3,636	6,180

By Market Cap (\$Billions)

	MSCI USA	MSCI World ex USA	MSCI World
Large/MidCap	\$11,855	\$10,656	\$22,511
Small Cap	\$ 2,005	\$ 1,481	\$ 3,486
Total	\$13,860	\$12,138	\$25,997

Large Cap

Russell
3000®
Index

Russell
1000®
Index

Largest
\$540B
(Apple)

Wtd Avg
\$93B

US Market – 98% of US

Largest 1,000 (90%)
stocks become the Russell 1000
Index

Next 2,000 (10%)
stocks become the
Russell 2000 Index

Banding is applied to existing
members of the underlying
indexes

Russell
2000®
Index

Largest \$2.6B
Wtd Avg \$1.1B

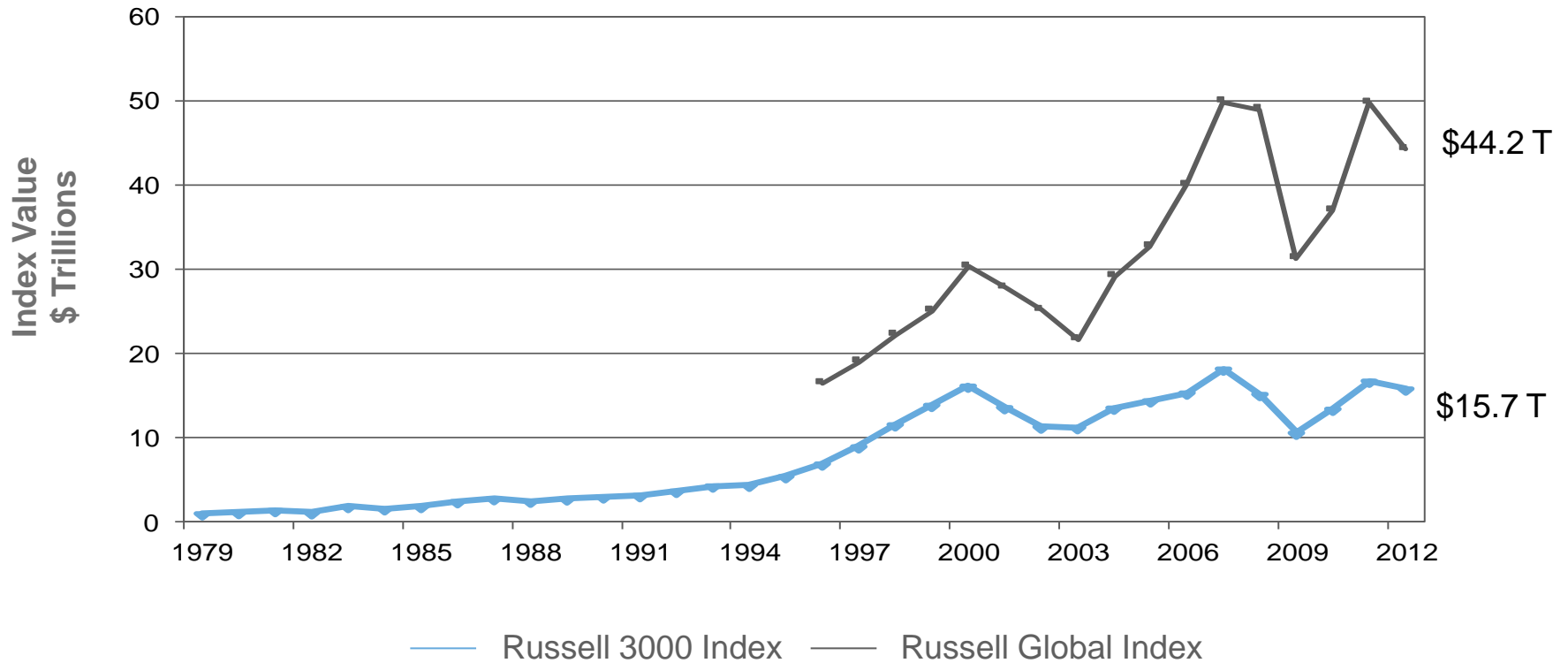
Microcap

Key US Equity Characteristics

March 31, 2012

	Russell 1000	Russell 2000	Russell 3000
Portfolio Allocations			
Portfolio Size (\$M)	14.4 T	1.2 T	15.7 T
% of structure	---	---	---
Cash	---	---	---
Style			
Price/Book	2.3 x	1.9 x	2.2 x
Price/Earnings (Exc. Neg. Earnings)	16.0 x	18.4 x	16.2 x
Dividend Yield	2.0%	1.4%	1.9%
Price/Cash Flow	10.6 x	13.4 x	10.8 x
Company Size			
Large Cap (Over \$57.5B)	44.4%	0.0%	40.9%
Medium Cap (\$5.5 B -- \$57.5B)	45.9%	0.0%	42.3%
Small Cap (Under \$5.5 B)	9.7%	100.0%	16.8%
Market Cap Average Nlog (\$Bil)	42.6	1.1	32.0
Sector Weights (Red = 3% or more below index, Green = 3% or more above index)			
Information Technology	19.9	16.7	19.7
Health Care	11.4	12.7	11.5
Consumer Discretionary	11.9	13.8	12.0
Consumer Staples	9.8	3.5	9.3
Energy	10.8	6.4	10.5
Materials	4.0	4.6	4.0
Industrials	10.9	15.8	11.3
Financial	15.3	22.5	15.9
Telecommunication Services	2.6	0.8	2.4
Utilities	3.4	3.2	3.4
Sector Deviation	---	---	---
Concentration			
% in Ten Largest Holdings	18.3	2.5	16.8
Number of Holdings	977	1941	2918

Reconstitution – Total market cap



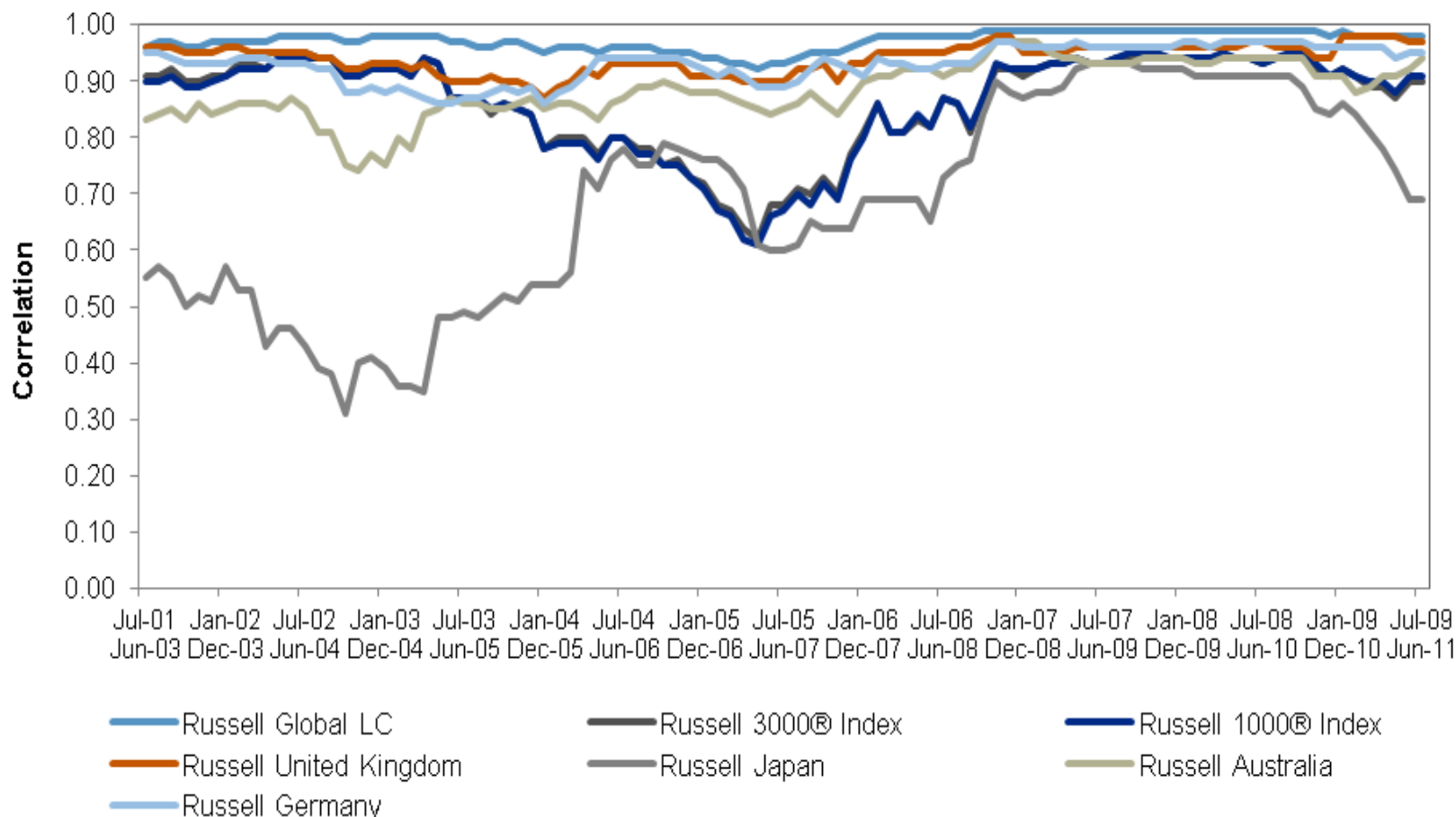
Data as of May 31, 2012

The too often overlooked asset class – why?

- › Efforts to reduce home country bias have been concentrated in large cap companies from ‘developed’ countries – particularly recognizable multi-national brands.
- › Diversification benefits of large cap global equities diminished in stressed environments– see GFC and EZSDC.
- › Correlations among major developed markets have all converged in recent years – common macro factors (industry, momentum, beta, etc.) now explain much of their performance.
- › Growth in emerging markets has captured investors attention but that has also been a large cap story.
- › The legacy MSCI effect (small cap index started only in 1998)

The too often overlooked asset class – why?

24-month correlations vs. Russell Developed ex-US Large Cap Index (July 31, 2001–June 30, 2011)

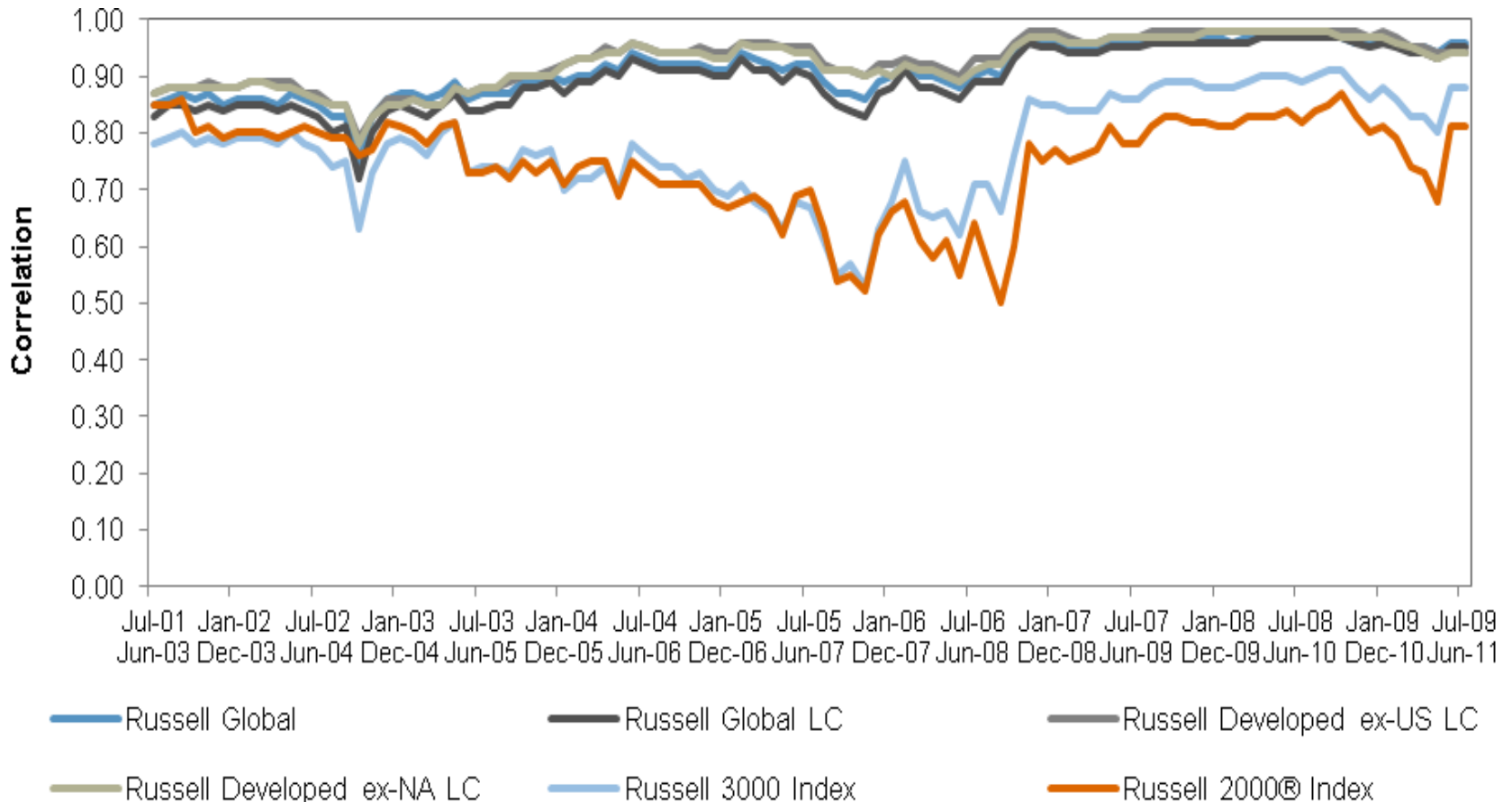


The too often overlooked asset class – why?

- › Non-U.S. small caps have continued to be a diversifying asset class for U.S. investors.
- › Some inherent differences exist between U.S. and non-U.S. small cap companies:
 - Life cycles – young vs. old
 - Types of companies – start ups vs. spin offs
 - Sector exposures – tech vs. industrials

The too often overlooked asset class – why?

**24-month correlations vs. Russell Global ex-US Small Cap Index
(July 31, 2001–June 30, 2011)**

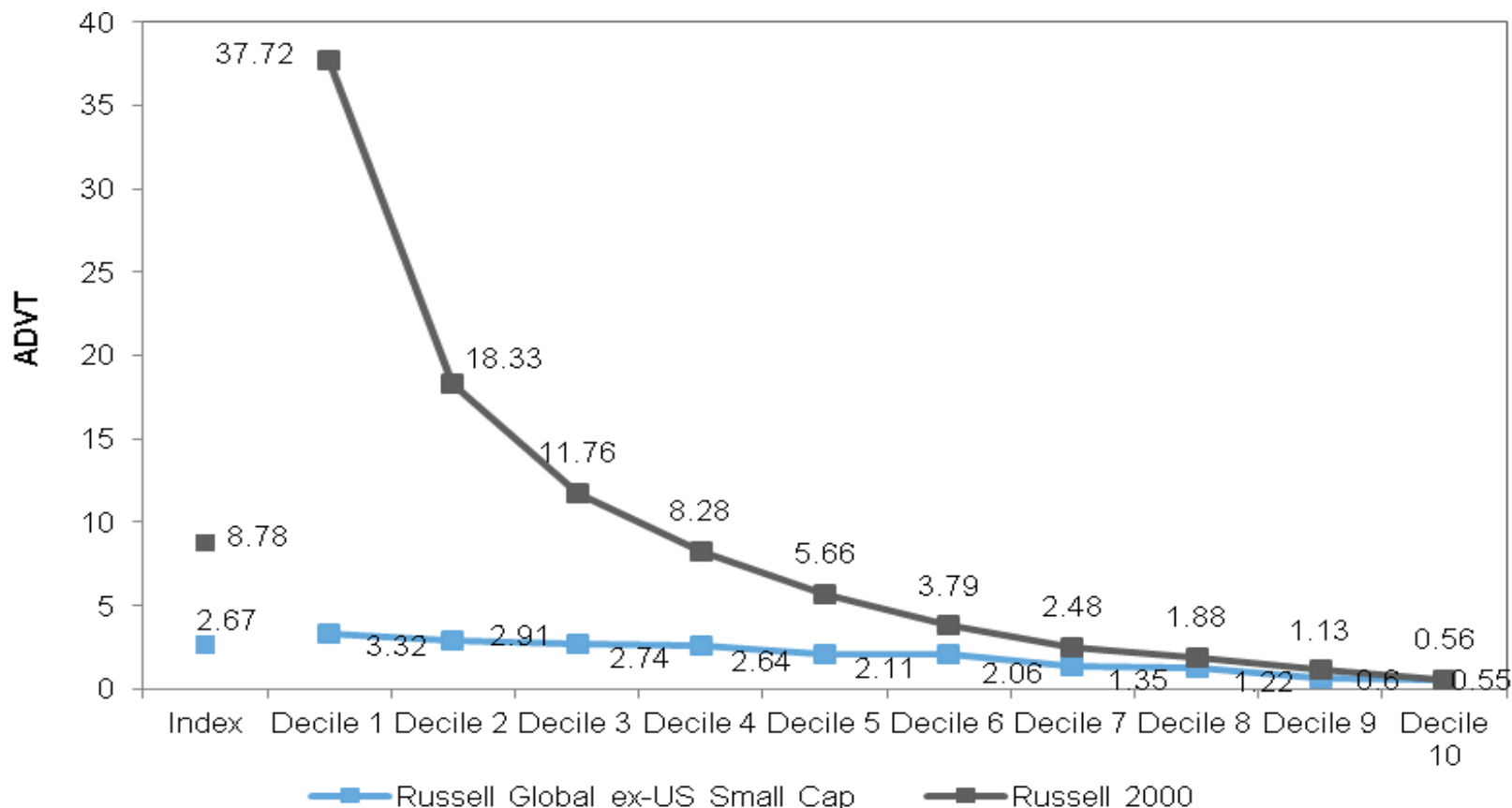


The too often overlooked asset class – why?

- › A riskier asset class:
 - Less transparency = more inefficiencies = opportunities for active management
 - Higher transaction costs
 - More company risk: more halts, bankruptcies, delistings
 - Higher liquidity risk

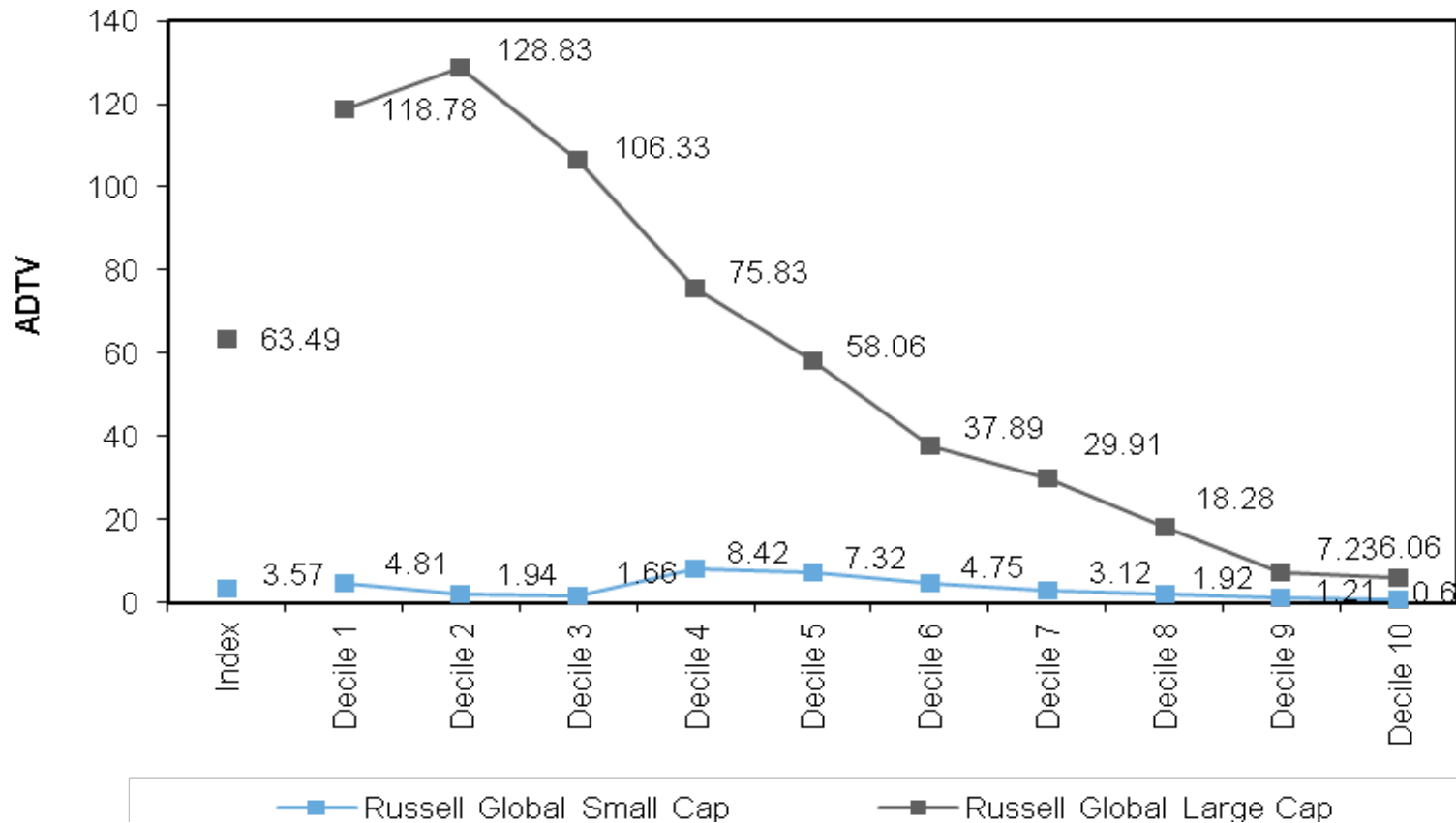
The too often overlooked asset class – why?

Small cap average daily dollar value traded by deciled market capitalization based on the Russell Global ex-US Small Cap and Russell 2000 indexes (liquidity scenario as of June 30, 2011)



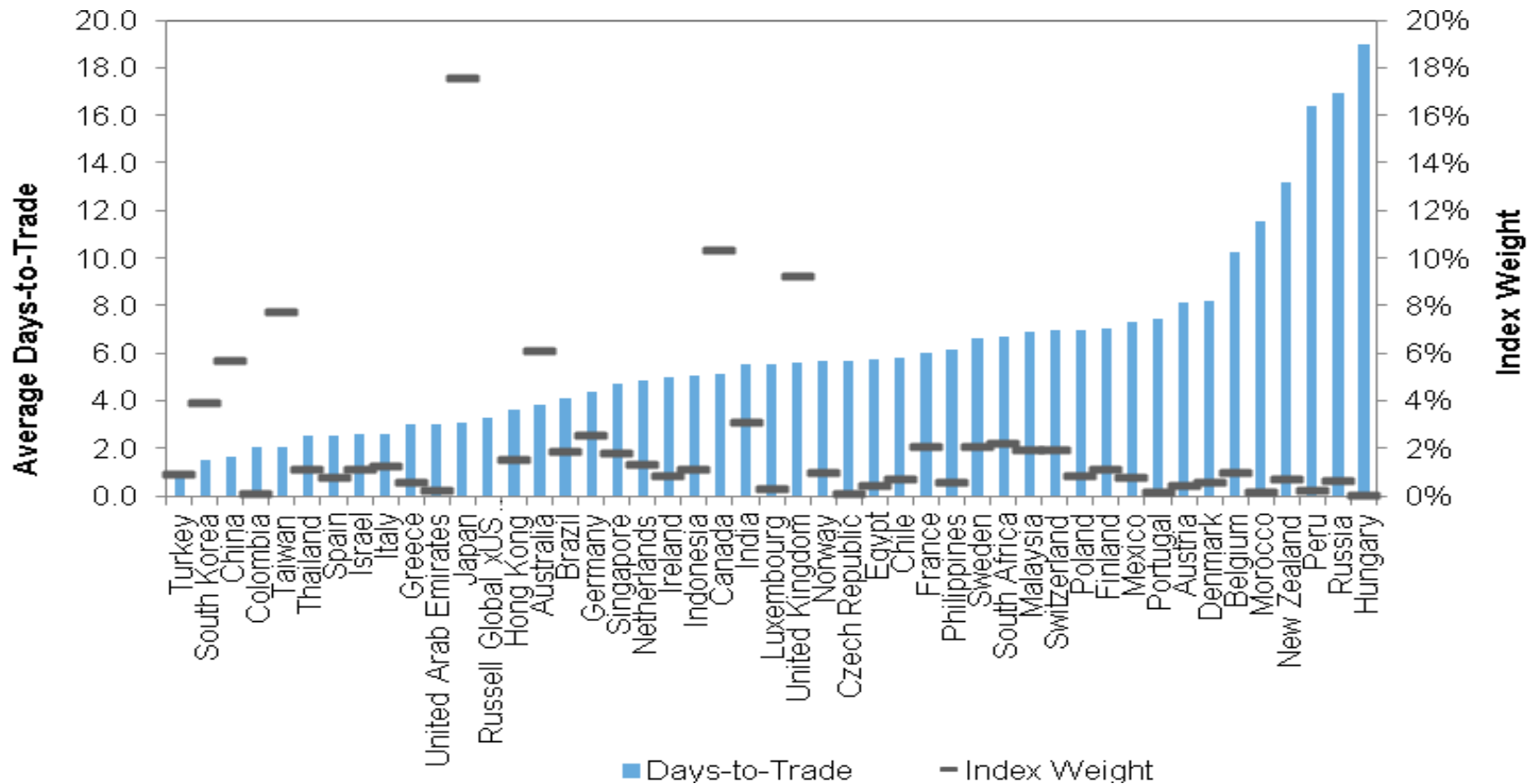
The too often overlooked asset class – why?

Small cap average daily dollar value traded by deciled market capitalization, based on the Russell Global Small Cap and Russell Global Large Cap indexes (liquidity scenario as of June 30, 2011)



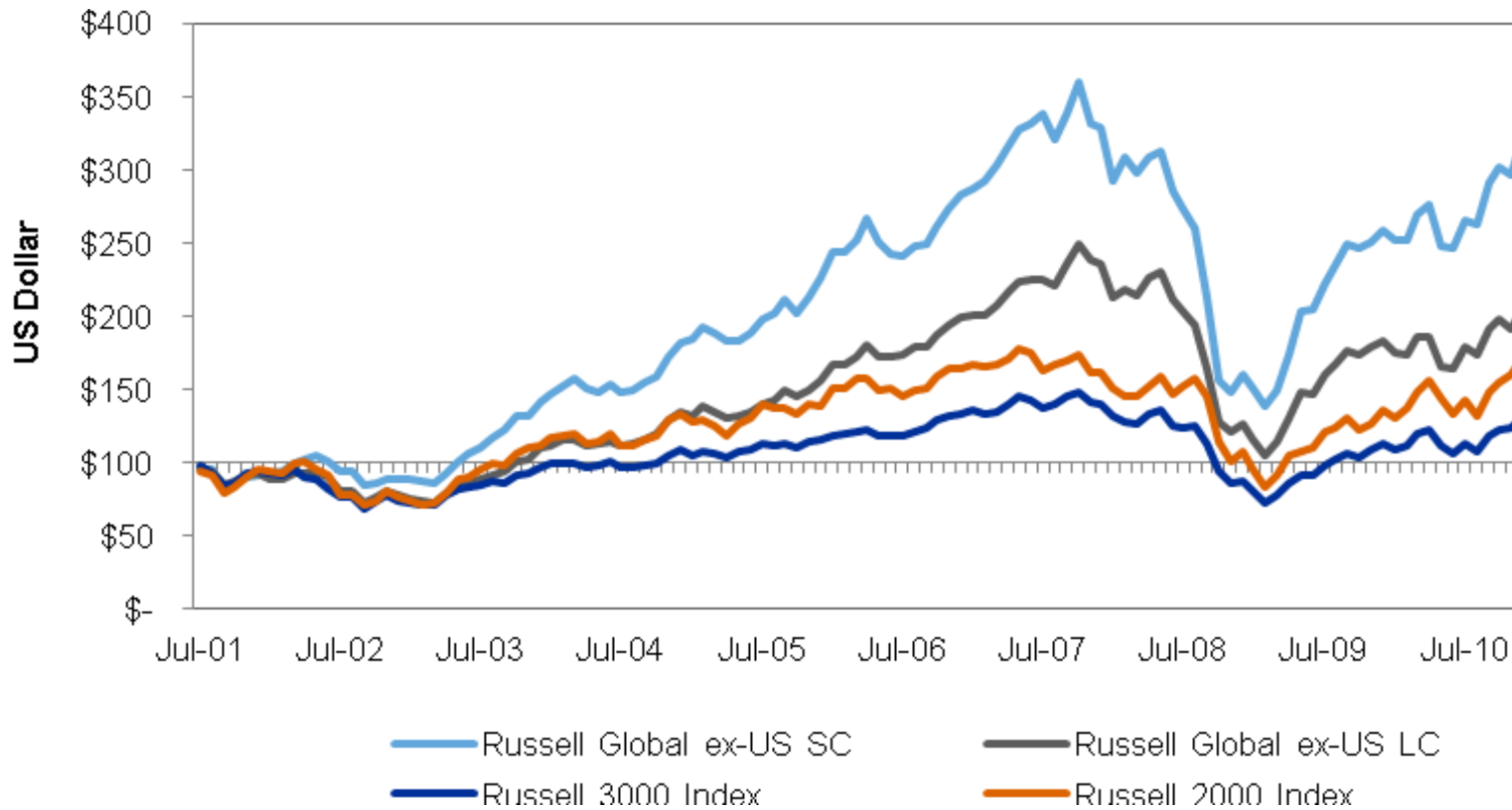
The too often overlooked asset class – why?

Simulated liquidity risk and Global ex-US Small cap Index weight by country (liquidity scenario as of June 30, 2011)



Risks have lead to rewards....

Growth of \$100: Cumulative performance of the Russell Global ex-US Small Cap Index (July 31, 2001–June 30, 2011)

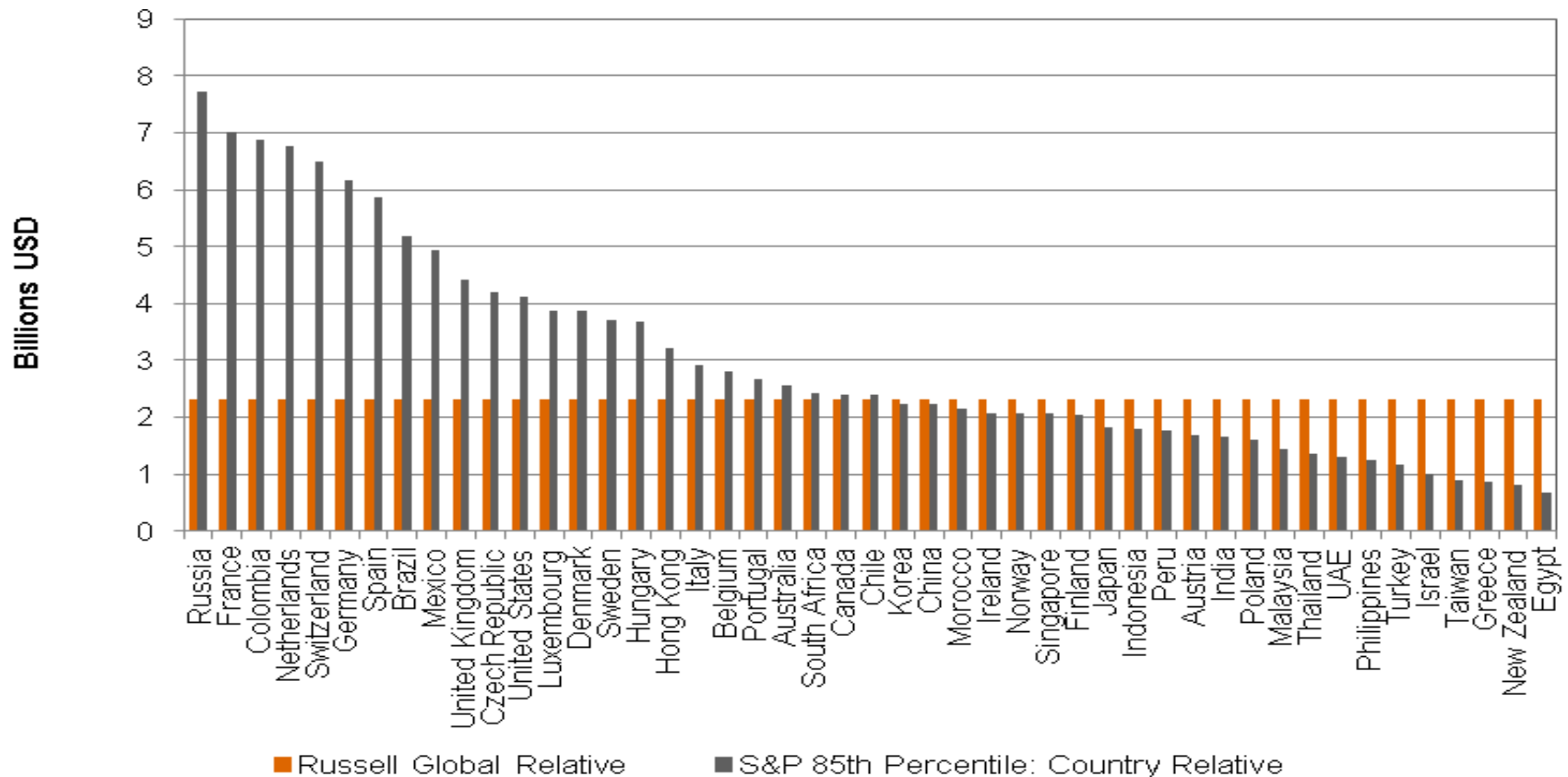


Definitions among index providers can vary, sometimes significantly

- › The historical approach to defining small cap has been to focus each country individually – this was MSCI’s approach pre-IMI (June, 2007), S&P still uses this approach.
- › Traditionally 85% of a market was assigned to large cap, and the remaining 15% was assigned to small cap.
- › Because of the variations in market sizes, the legacy country-by-country approach leaves you with a disjointed view of small cap when aggregated into broader regional indexes.
- › Russell breaks the mold (Jan., 2007) by applying a consistent definition of size across all markets. We believe ‘global relative’ will be the industry standard.

Definitions among index providers can vary, sometimes significantly

Simulated global- vs. country-relative small cap size definitions by country, based on May 31, 2011 Russell data

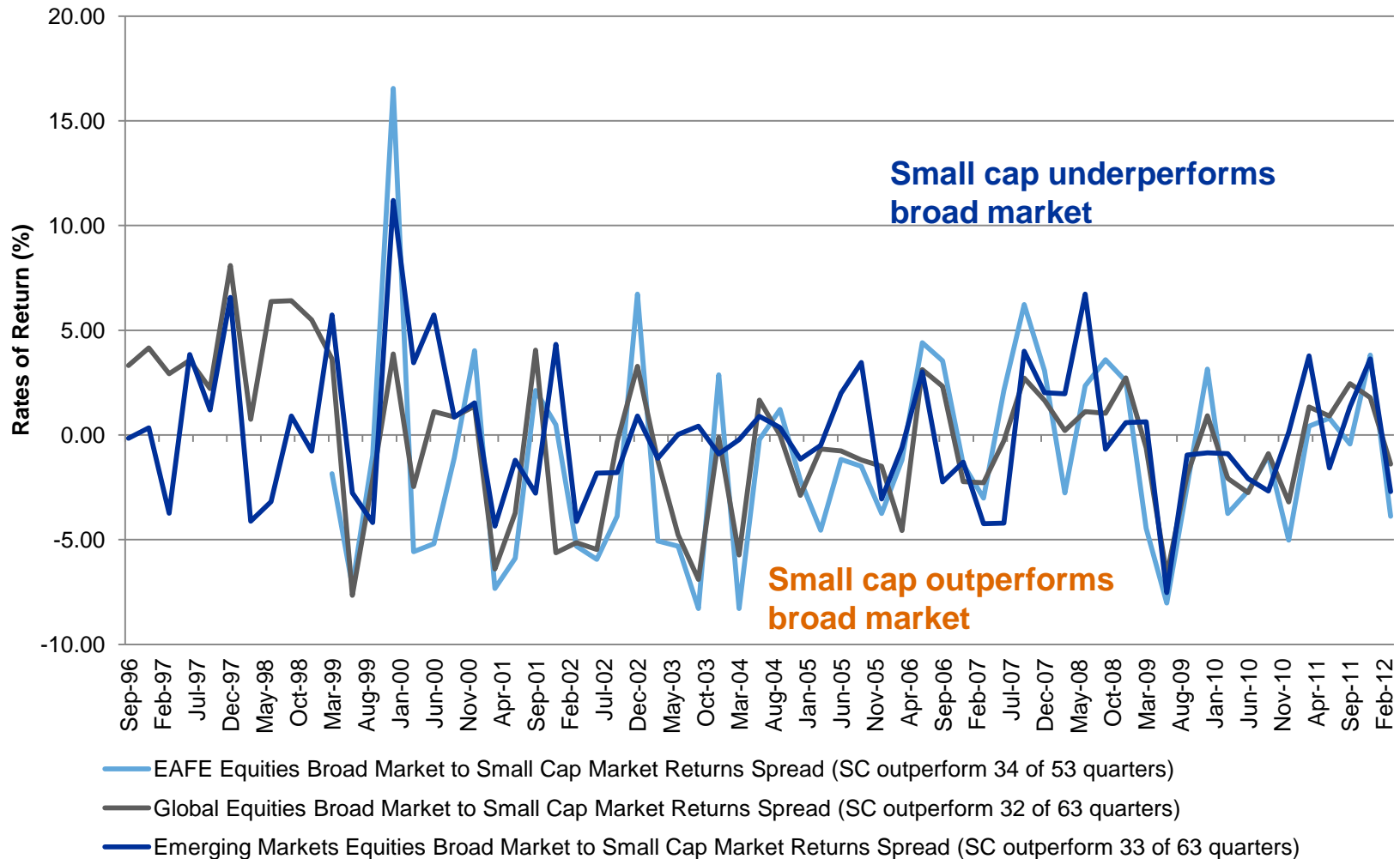


Definitions among index providers can vary, sometimes significantly

- › Russell Indexes has partnered with Intersec Research, an independent 3rd party global investment consultant.
- › Intersec conducted a survey on Russell Indexes' behalf in June 2011 asking about manager's views on global small cap:
- › Asked 32 international managers with small cap products if they defined their small cap opportunity country-by-country and 26 (81%) said no – they define more broadly.
- › Asked managers what a right-sized small cap benchmark looked like - \$wtd average market cap between \$1-\$2B.

Quarterly return spread between broad market and small cap indexes

As of March 2012

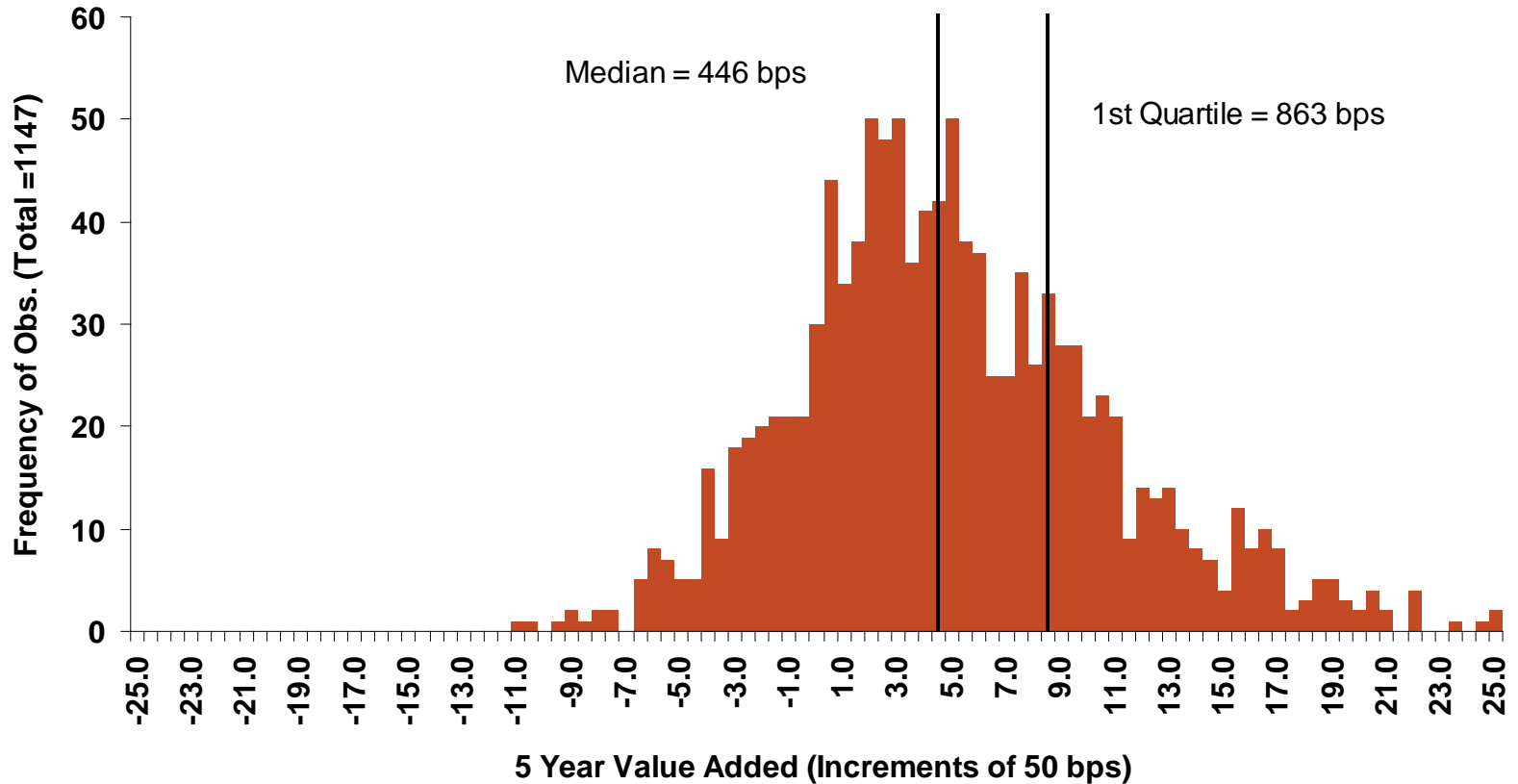


Note: International Broad and Small Cap Equities represented by MSCI EAFE Index and MSCI EAFE Small Cap Index respectively
 Global Broad and Small Cap Equities represented by Russell Global Index and Russell Global Small Cap Index respectively
 Emerging Markets Broad and Small Cap Equities represented by Russell EM and Russell EM Small Cap Indexes respectively

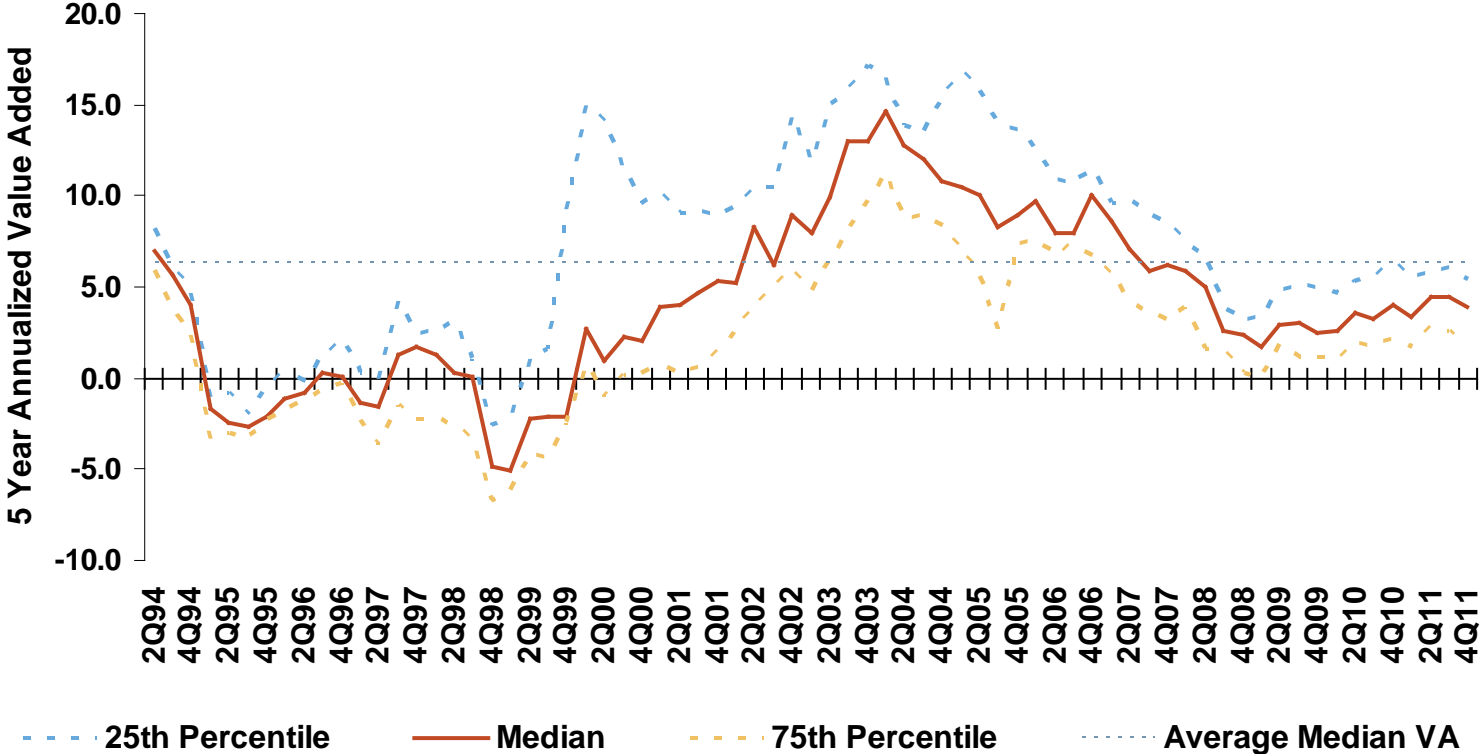
Implementation: The Odds of Active Management Success

- › Very good with good fundamental, bottom-up, managers
- › Small Caps are under-researched
- › The Sector is therefore somewhat inefficient
- › Fallen angels can be undiscovered gems
- › Managers can game the index
- › Active management, even on average, can add value

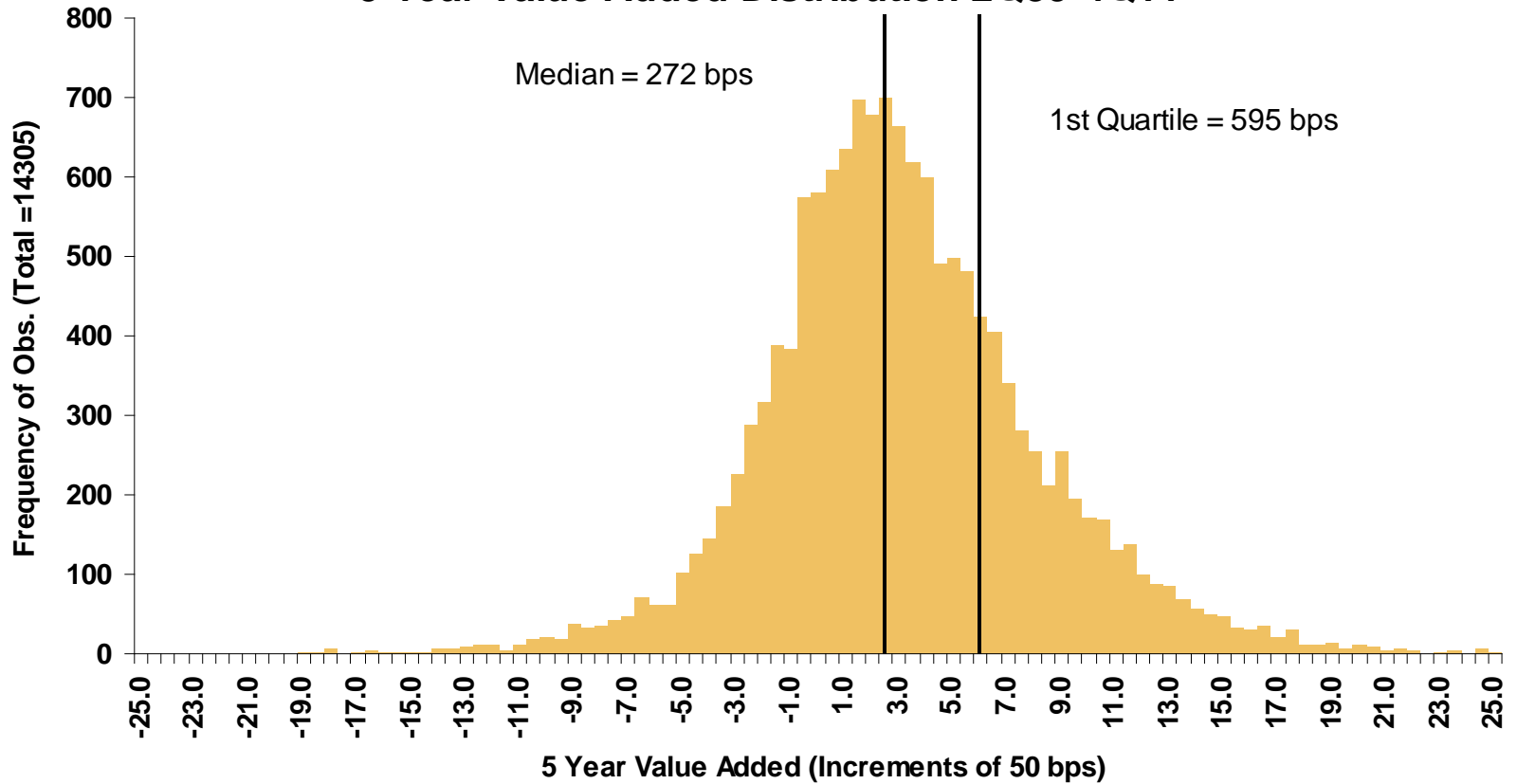
EAFE Small Cap Equity Managers vs. MSCI EAFE 5 Year Value Added Distribution 1Q00-4Q11



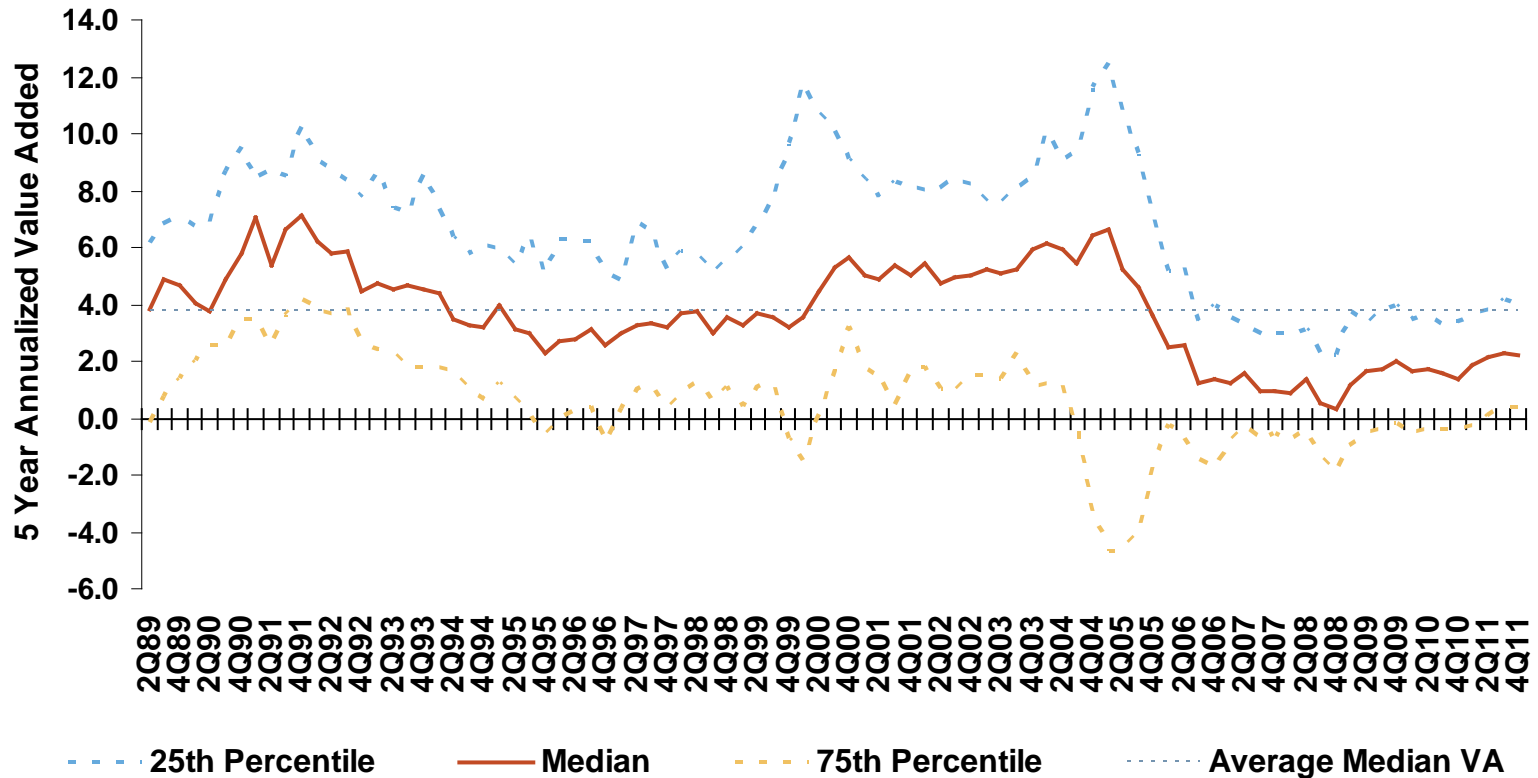
Quarterly Rolling 5 Year Value Added (1Q00-4Q11) EAFE Small Cap Equity Managers Universe vs. MSCI EAFE



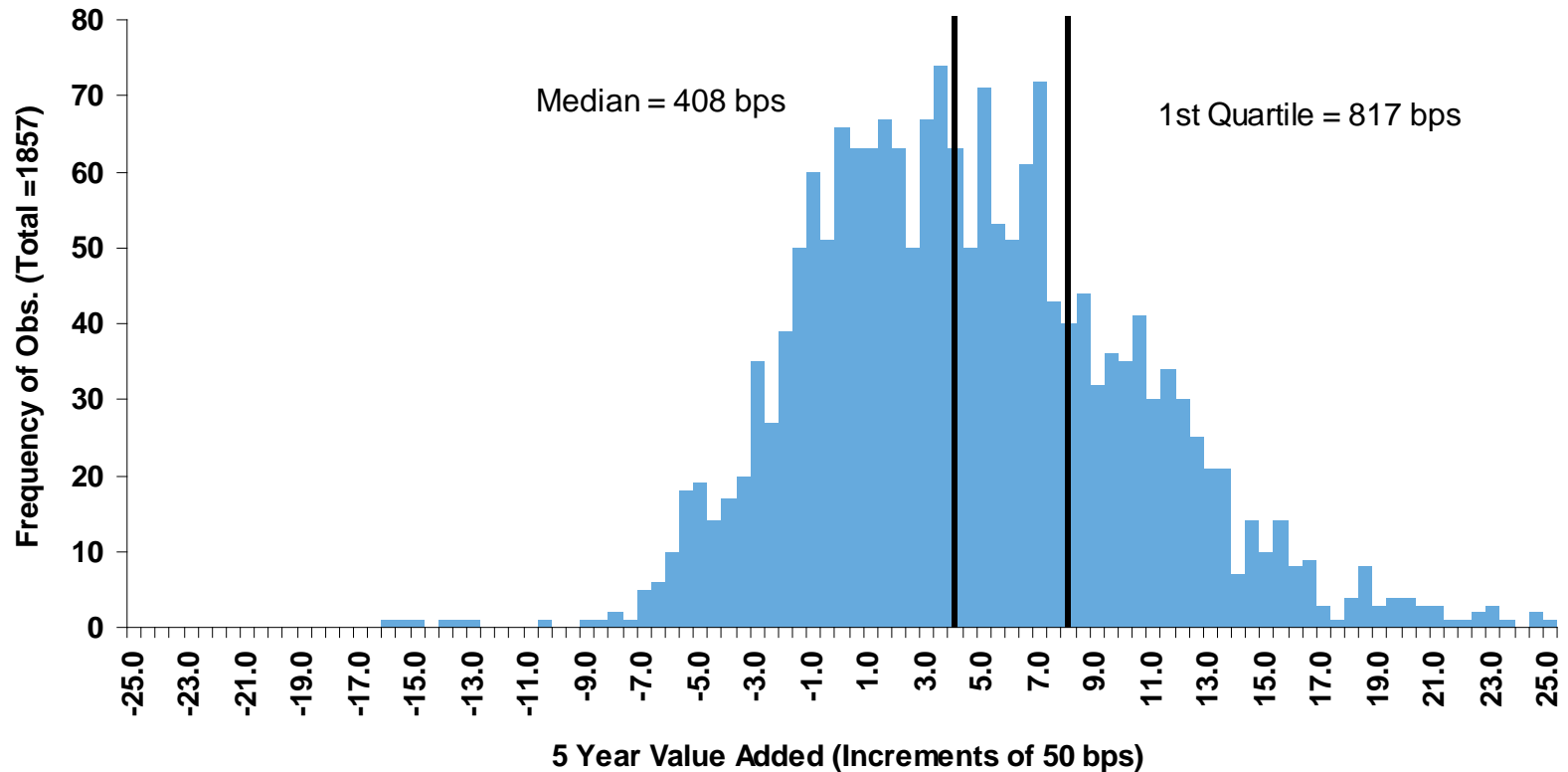
US Small Cap Equity Managers vs. Russell 2000 5 Year Value Added Distribution 2Q89-4Q11



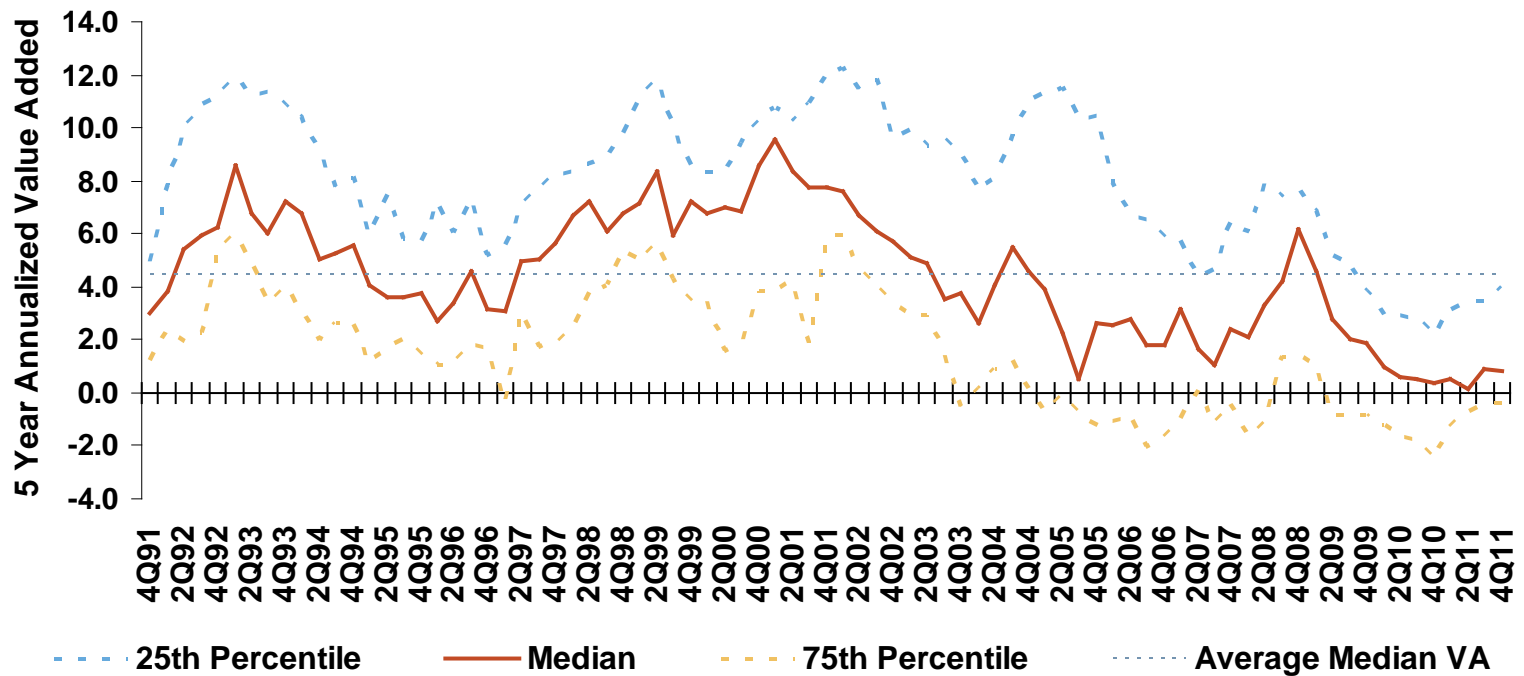
Quarterly Rolling 5 Year Value Added (2Q89-4Q11) US Small Cap Equity Manager Universe vs. Russell 2000



Canadian Small Cap Equity Managers vs. Nesbitt Burns Small Cap Weighted Blended 5 Year Value Added Distribution 4Q91-4Q11



Quarterly Rolling 5 Year Value Added (4Q91-4Q11) Canadian Small Cap Equity Manager Universe vs. Nesbitt Burns Small Cap Weighted Blended



What Inhibits Active Management?

- › Lack of idea generation
- › Illiquidity
- › \$AUM that are too large
- › Lack of dedicated resources
- › Poor sell discipline
- › Not appreciating the full extent of the investable universe
- › A single manager, out of favour

The Case for International Small-Cap Equities

Source: GSAM Insights February 2012

1. International equities are a growing share of global capitalization;

- Small cap equities comprise 14% of today's total global market cap;
- Within small cap equities, international small caps represent 55% of the total universe;

2. The international equity asset class is a collection of diverse opportunity sets;

- the small-cap segment of this universe can offer a differentiated, compelling solution;

3. A strong relative performance history;

- Over the last decade, international small-cap equity has outperformed US large cap equity by almost 100% and international large cap equity by almost 70% on a cumulative basis;
- On a risk adjusted basis, international small-cap performance has also been compelling, with a Sharpe ratio double that of US small-cap and international large cap, and nearly 4X that of the US large cap universe;

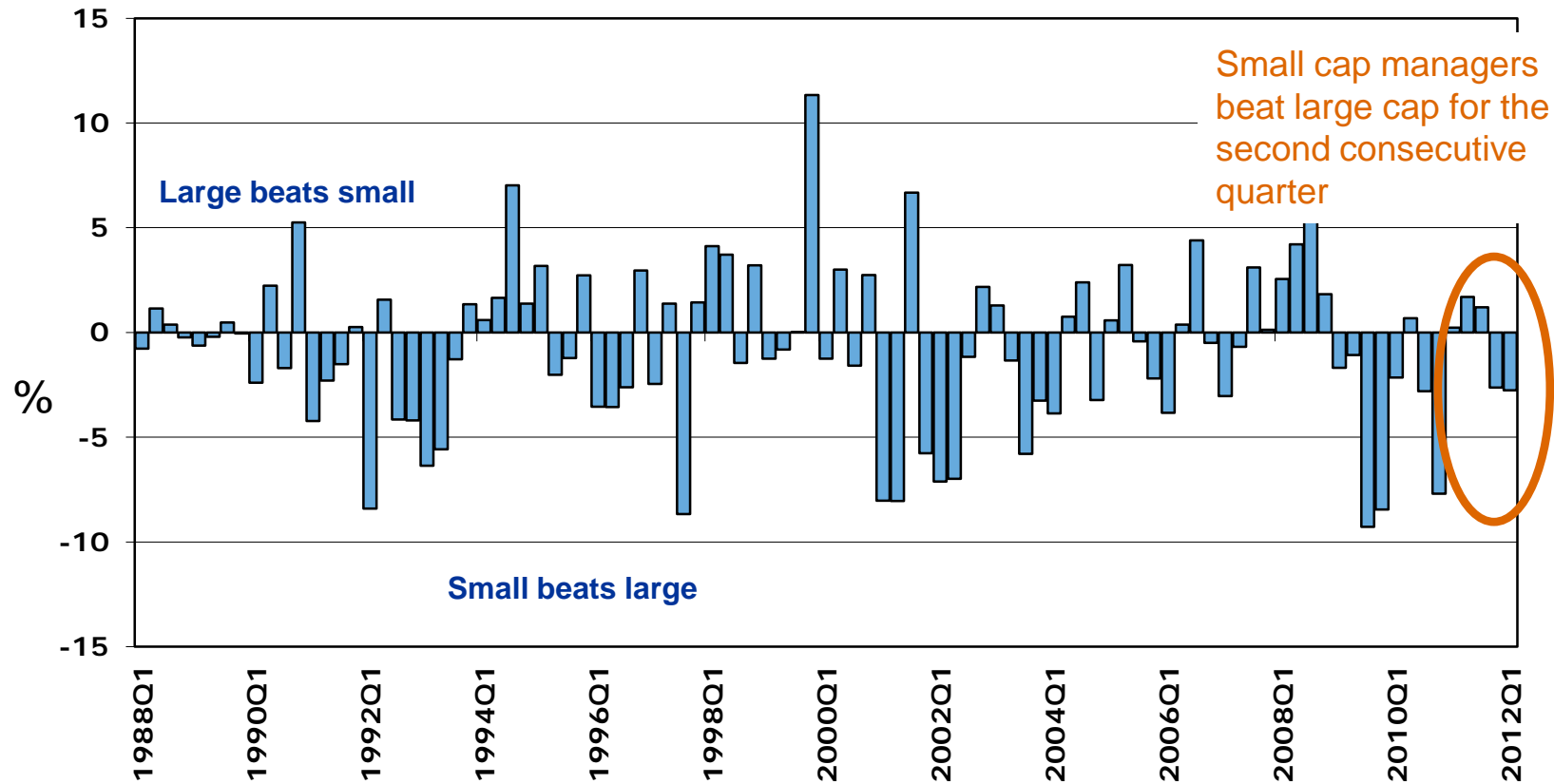
4. This broad and inefficient universe presents opportunities for active management;

- 4000 international small cap stocks vs 1200 large cap
- Less research coverage

APPENDIX

Canadian small cap managers beat large cap managers 10-year average +94 bps

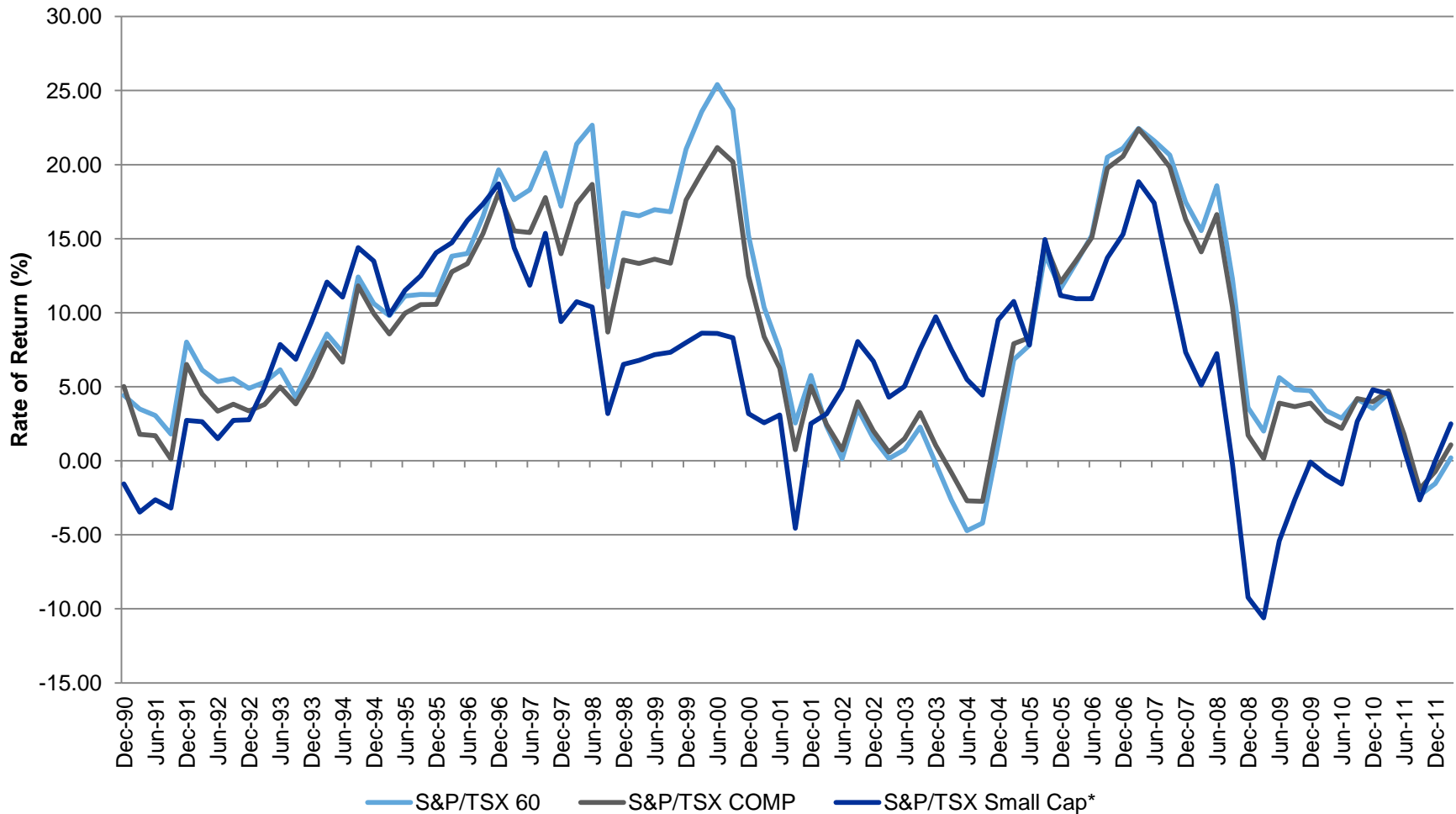
Large Cap Median Minus Small Cap Median Returns as of March 2012



Source: Russell Investments Canada Limited using Russell Universe Data

Canadian Equity Markets

4-year rolling returns (annualized C\$) as of March 2012



* S&P/TSX Small Cap linked to BMO Small Cap Weighted Index prior to 2001

Definitions among index providers can vary, sometimes significantly

Simulated MSCI adjustments to small cap size definitions based on May 31, 2011 Russell data

