

## Diversification Dashboard - 31.08.2013

TOBAM's Diversification Ratio (DR)<sup>1</sup> measures to what extent a portfolio is diversified. The DR2 (square of the diversification ratio) measures the number of effective degrees of freedom to which a portfolio is exposed. As the table shows, the "broad market" indices leave diversification on the table. In addition to a snapshot of each market's DR2, the table shows the DR<sup>2</sup> of a well-diversified portfolio, and the fraction of available diversification used by the index.

	DR <sup>2</sup> - Index diversification	DR <sup>2</sup> - Maximum diversification	% diversification used by index
MSCI EMU	2.52	7.73	32.6%
MSCI US	3.27	9.16	35.7%
MSCI UK	2.74	4.75	57.6%
MSCI Japan	2.13	5.36	39.8%
MSCI World	4.63	16.32	28.4%
MSCI Australia	2.85	5.17	55.1%
MSCI Pacific ex-Japan	2.81	6.85	41.1%
MSCI Canada	4.39	8.83	49.6%
MSCI Emerging	5.05	10.18	49.6%
MSCI All Countries	5.06	17.56	28.8%

## Pacific Equities and diversification across regions

Eleven out of thirteen Anti-Benchmark portfolios have outperformed their benchmarks year to date through 30/08/2013, except for the Pacific region. Across portfolios, volatility has been reduced by up to 30%. Against the backdrop of the rallying Japan equity market, we do note that the AB Pacific portfolio underperformed its benchmark by -5.95%, while reducing volatility by 23%.

The following relationships explain this relative performance:

- 1. The MSCI Pacific index is heavily exposed to the Japanese stock market, as illustrated by the MSCI Pacific index's 95% correlation and 0.61 beta to the MSCI Japan index year to date.
- 2. The AB Pacific portfolio's correlation to the MSCI Japan index was only 66%, and its Beta to the Japan equity market was 0.30 year to date in 2013.

Impact of Japan equities within a Pacific region portfolio: MSCI vs. the Anti-Benchmark *Year to date through August 30, 2013* 

	MSCI Japan		
	Correlation	Beta	
MSCI Pacific	95%	0.61	
Anti-Benchmark Pacific	66%	0.30	
	•	Source: TOBAM	

Against this backdrop of a concentrated market, in order to construct the Most Diversified Portfolio for the MSCI Pacific investment universe, the AB Pacific portfolio selected a diversified mix of stocks across countries which resulted in less exposure to Japan than the MSCI Index.

<sup>&</sup>lt;sup>1</sup> TOBAM's Diversification Ratio measures a portfolio's or index's diversification. It is supported by original research and is based on a mathematical definition of diversification. TOBAM's "Anti-Benchmark" Most Diversified Portfolio® maximizes this Diversification Ratio. Maximizing diversification within a universe of securities provides a result closer to the true market risk premium from that universe. "Maximum Diversification®" and "MaxDiv®" are registered trademarks of TOBAM.





Year to date, the MSCI Japan index returned 14.73% in USD, outperforming the MSCI Pacific ex-Japan USD index's -1.62% return by +16.35%. The above difference in Beta should thus explain -0.31 x 16.35% = -5.07% of the latter index's underperformance. The difference between this -5.07% and the actual underperformance of -5.95% is, in this respect, an "alpha." Regardless of the sign of this alpha, it allows us to interpret to what degree the AB Pacific portfolio's ability to capture significantly more diversification than its benchmark index impacted its relative performance.

In most cases, regardless of region, in order to outperform the AB, the Index should have implemented "winning bets," i.e., the index would have "concentrated." In line with this intuition, exposure to Japan was a winning bet for the MSCI Pacific index (Japan outperformed the market year to date by 16.20%) and in fact the weight of Japan in the MSCI Pacific increased from 58.86% to 63.30%: the Benchmark concentrated!



## **Anti-Benchmark Equity Strategies Update**

An of Auror 20, 2012	Performance		Volatility
As of August 30, 2013	YTD	Δ	YTD
Anti-Benchmark Emerging Markets Equity (USD)  MSCI Daily TR Net Emerging Markets (USD)	<b>-7.45%</b> -10.19%	2.75%	<b>12.26%</b> 14.13%
Anti-Benchmark Euro Equity (EUR)  MSCI Daily TR Net EMU Local	<b>14.19%</b> 8.10%	6.09%	<b>11.15%</b> 16.23%
Anti-Benchmark France Equity (EUR)  MSCI Daily TR Net France Local	<b>15.38%</b> 10.07%	5.31%	<b>13.15%</b> 17.21%
Anti-Benchmark US Equity (USD)  MSCI Daily TR Net US Local	<b>27.07%</b> 15.88%	11.19%	<b>12.58%</b> 11.88%
Anti-Benchmark Japan Equity (JPY)  MSCI Daily TR Net Japan Local	<b>30.64%</b> <i>30.19%</i>	0.46%	<b>21.31%</b> 28.87%
Anti-Benchmark UK Equity (GBP)  MSCI Daily TR Net UK Local	<b>16.15%</b> <i>11.82%</i>	4.33%	<b>11.76%</b> 13.59%
Anti-Benchmark Global Equity (EUR)  MSCI Daily TR Net World EUR	<b>18.38%</b> 11.69%	6.69%	<b>10.15%</b> 10.89%
Anti-Benchmark World Equity (USD)  MSCI Daily TR Net World USD	<b>20.53%</b> 11.71%	8.83%	<b>9.90%</b> 10.83%
Anti-Benchmark Canada Equity (CAD)*  S&P/TSX COMPOS TR INDEX (CAD)	<b>10.99%</b> 3.86%	7.13%	<b>9.84%</b> 10.94%
Anti-Benchmark Europe Equity (EUR)**  MSCI Daily TR Net Europe EUR	<b>9.55%</b> 8.29%	1.26%	<b>11.19%</b> 13.18%
Anti-Benchmark Pacific Equity (USD)**  MSCI Daily TR Net Pacific USD	<b>2.04%</b> 8.00%	-5.95%	<b>13.87%</b> 18.09%
Anti-Benchmark Pacific-ex Japan Equity (USD)  MSCI Daily TR Net Pacific ex-Japan USD	- <b>3.66%</b> -1.62%	-2.04%	<b>11.35%</b> 15.19%
Anti-Benchmark ACWI Global Equity (USD) ***  MSCI Daily TR Net AC World (USD)	<b>2.96%</b> -0.06%	3.01%	<b>11.54%</b> 11.52%

Performance is calculated using time-weighted, geometrically-linked rates of return using end of month market values in the reference currency as noted. All returns are gross of fees and reflect the reinvestment of dividends and other income. Past performance is not indicative of future results.

\* Returns after March 28, 2013 reflect the open-ended Anti-Benchmark Canada Equity fund, launched on March 28, 2013. Prior to the Fund launch, returns reflect the Anti-Benchmark Canada Equity strategy, launched

Source: TOBAM

<sup>\*\*</sup>Returns giver waitch 28, 2013, which is managed identically as a carve-out of a global equity portfolio. Carve-outs are managed separately and are representative of a stand-alone portfolio managed to the same strategy. Since strategy inception 29/04/2011.

\*\* Returns reflect a carve-out of a multi-sector global equity portfolio. Carve-outs are managed separately and are representative of a stand-alone portfolio managed to the same strategy. Carve-out returns include cash returns, are gross of fees and reflect the reinvestment of dividends and other income.

\*\*\* Since strategy inception 29/04/2013



## For more information

TOBAM is an asset management company offering innovative investment capabilities whose aim is to maximize diversification. TOBAM's flagship Anti-Benchmark® strategies, supported by original research and a mathematical definition of diversification, provide clients with diversified core equity exposure, both globally and in domestic markets. FTSE also publishes the FTSE TOBAM Maximum Diversification Index Series based on the Anti-Benchmark equity portfolio construction methodology. The company manages over \$4.9 billion via its Anti-Benchmark strategies for institutional clients worldwide. Its team includes 20 financial professionals.

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