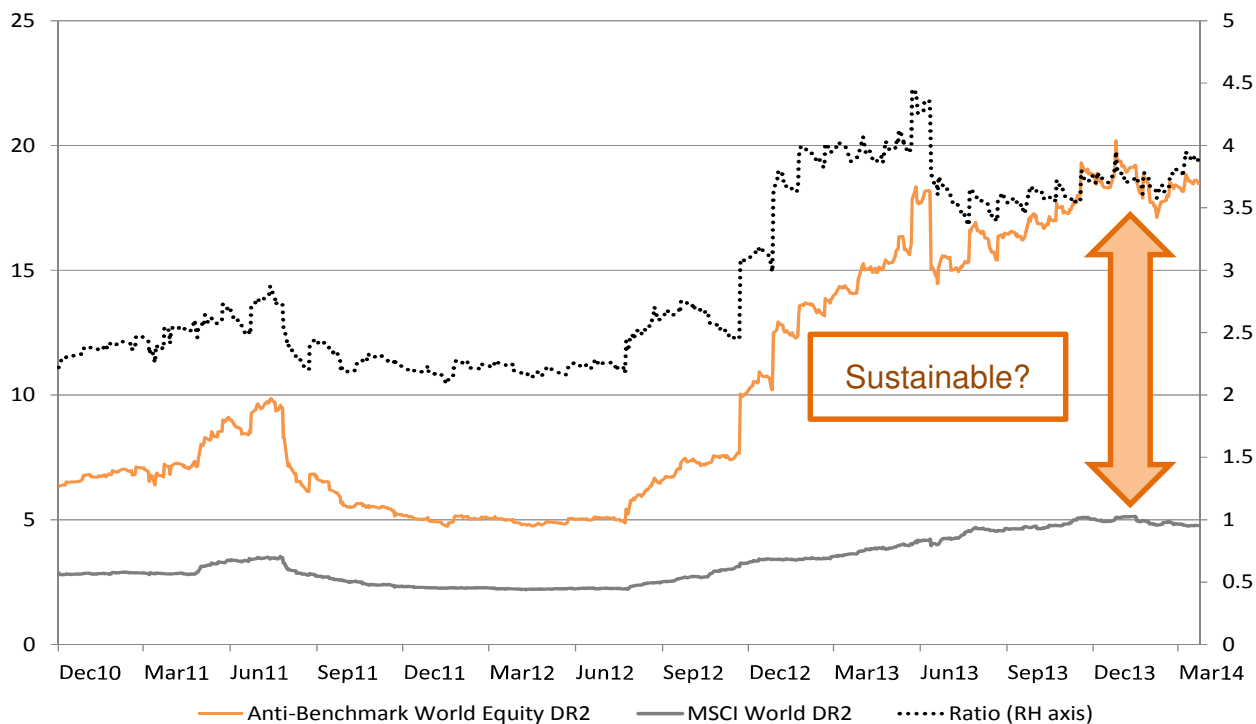


## Diversification Dashboard April 2014:

TOBAM's Diversification Ratio (DR) <sup>1</sup> measures to what extent a portfolio is diversified. The DR <sup>2</sup> (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 DR <sup>2</sup> , the table shows the DR <sup>2</sup> of a well-diversified portfolio, and the fraction of available diversification used by the index.		<i>DR<sup>2</sup> - Index diversification</i>	<i>DR<sup>2</sup> - Maximum diversification</i>	<i>% Diversification used by index</i>
		<b>MSCI All Countries</b>	5.26	25.87
	<b>MSCI World</b>	4.82	18.33	26.3%
	<b>MSCI Emerging</b>	4.81	9.60	50.1%
	<b>MSCI US</b>	3.31	9.32	35.5%
	<b>MSCI Canada</b>	4.64	9.34	49.7%
	<b>MSCI EMU</b>	2.62	8.12	32.3%
	<b>MSCI Pacific ex-Japan</b>	2.64	6.46	40.8%
	<b>MSCI UK</b>	2.89	5.33	54.3%
	<b>MSCI Japan</b>	1.94	4.21	46.0%
	<b>MSCI Australia</b>	2.66	4.81	55.3%

As of 31<sup>st</sup> March 2014

## Is the MSCI World ripe for an Upward Diversification Correction?



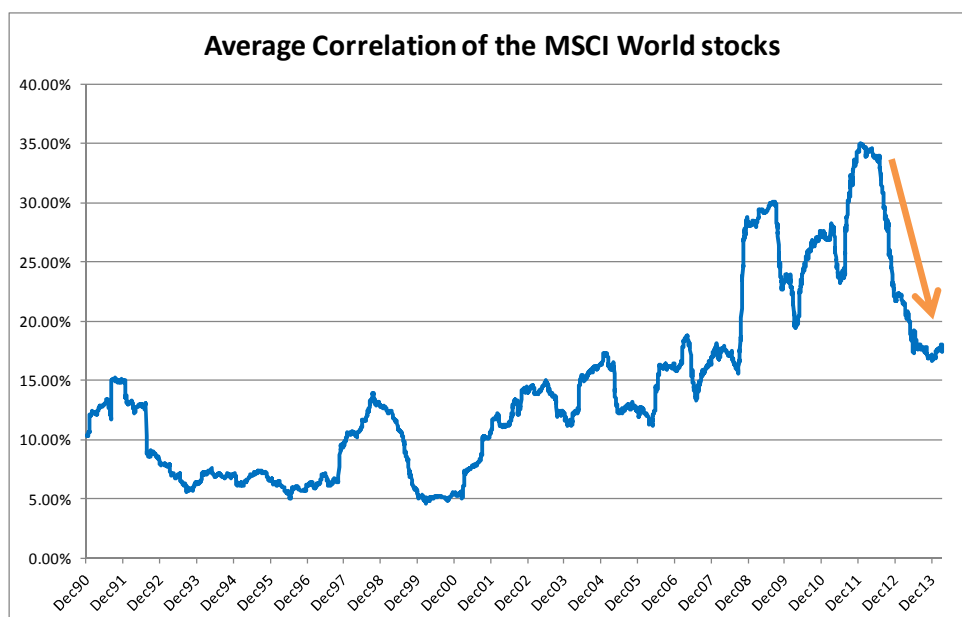
The above chart shows the evolution of the Diversification Ratio<sup>2</sup> for the Anti-Benchmark<sup>®</sup> World Equity Fund (AB World) and the MSCI World Index (Benchmark) since inception (December 2010).

<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<sup>®</sup> 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<sup>®</sup>" and "MaxDiv<sup>®</sup>" are registered trademarks of TOBAM.

We observe an important difference in the evolution of the DR<sup>2</sup>s -or number of effective degrees of freedom to which these portfolios are exposed- of the AB World vs. MSCI World. The DR<sup>2</sup> of AB World has nearly quadrupled in the last couple of years, and as a result the fraction of available diversification used by the benchmark has decreased dramatically and stands at 26% as of 31<sup>st</sup> March 2014. One may wonder whether such a situation can be sustainable, and if not, what would be the eventual consequences.

## Correlation trends

In order to put the above observation in perspective, we note that after the financial crisis, markets went through a massive rally, fuelled by massive liquidity injection by central banks. As a result, assets remained highly correlated to each other even as the crisis abated, until mid-2011. This is illustrated by the following graph showing the average correlation of stocks belonging to the MSCI World since 1990:



Source: TOBAM, Bloomberg

However as a consequence of the significant decline in average correlation over the last couple of years, there are significant opportunities for building portfolios that are more diversified, as shown for example by the current Diversification Ratio<sup>®</sup> achieved by the Anti-Benchmark<sup>®</sup> World.

Still, the Market Cap Weighted Benchmark does not seem to have yet benefited from these opportunities to the same extent. One reason could be that while correlations decreased during the few years, the benchmark has concentrated more and more in the sectors that benefited the most from the recovery and exhibited the strongest momentum. Thus the positive effect of a lower correlation may have been compensated by a strong momentum effect.

## Scenario analysis

The diversification achieved by the MSCI World is at its lows relative to the diversification available in the market. In other words the concentration of the benchmark is at its highest relative to available diversification.

The first possible scenario is a prolongation of the concentration trend for the benchmark. From a diversification standpoint, it is not a favourable scenario for the index.

The alternative scenario is that the benchmark becomes less concentrated in its current momentum bets. This would happen if stocks that have shown the highest momentum over the last bull market leg started to do less well relatively to others. In that case, by construction the performance of the benchmark would suffer from the underperformance of these momentum stocks to which it has the biggest exposure.

## Conclusion

In the last two years, the  $DR^2$  of the AB World strategy has quadrupled, while the  $DR^2$  of the MSCI experienced only half of that increase.

As of 31<sup>st</sup> March 2014, the benchmark appears at the highest level of concentration relative to the full diversification potential.

From a scenario perspective, the benchmark would either correct its bets, which means experiencing underperformance, or increase concentration further which is not sustainable indefinitely.

## 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. The company manages over \$5.6 billion via its Anti-Benchmark strategies for institutional clients worldwide. Its team includes twenty four financial professionals.

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