Diversification Update at 31/05/2012

TOBAM's Diversification Ratio (DR)[1] measures to what extent a portfolio is diversified. The DR^2 (square of the diversification ratio) corresponds to the number of independent degrees of freedom in a particular portfolio – or the number of independent variables at work. As the table shows, the "broad market" indices leave diversification on the table. In addition to a snapshot of each market's DR^2, the table shows the DR^2 of a well-diversified portfolio, and the fraction of available diversification used by the index.

	DR^2 - Index diversification	***DR^2 - Maximum diversification***	***% diversification used by index***
MSCI EMU	1.66	3.61	*46%*
MSCI US	1.74	3.76	*46%*
MSCI UK	1.77	2.79	*63%*
MSCI Japan	2.43	7.67	*32%*
MSCI World	2.25	4.97	*45%*
MSCI Australia	1.69	2.89	*58%*
MSCI Emerging[2]	2.96	4.37	*68%*

An apple a day, not the whole orchard

Apple's weight in the benchmark
Apple's stock price volatility could cause some indigestion for investors with significant exposure to the stock by virtue of their active or passive positions managed against the US equity indices of which Apple is a member.

For the benchmark, Apple's weight is sizeable – 20% in the NASDAQ and 4% in the MSCI USA as of May 31, 2012. In terms of benchmark risk, Apple is also responsible for about 5% of index volatility – for an index with 600 members and about 12% volatility year to date through May. Indeed, the IT sector, dominated by Apple, is the largest contributor to benchmark risk for the year and year to date periods ended May 31, 2012, surpassing even that of Financials. This is not a surprising phenomenon, given that the benchmark's strategy consists of increasing its position in line with increasing market capitalization.

For the Anti-Benchmark, Apple is no longer as diversifying as the other stocks selected from the MSCI USA index. Apple accounts for a disproportionate share of risk in the market, all the while being more correlated with the market and with the AB US portfolio than the rest of the portfolio. As such, Apple is not held in the AB US portfolio.

TOBAM's objective, to maximize diversification, translates to holding the most complementary, or least correlated, mix of stocks possible in a given investment universe, to ensure that no single risk factor dominates overall portfolio risk. The table below illustrates this rationale: Apple is indeed *less correlated* to the AB portfolio than the average MSCI stock, but Apple is still *more correlated to the AB US portfolio* than all other stocks held in the portfolio:

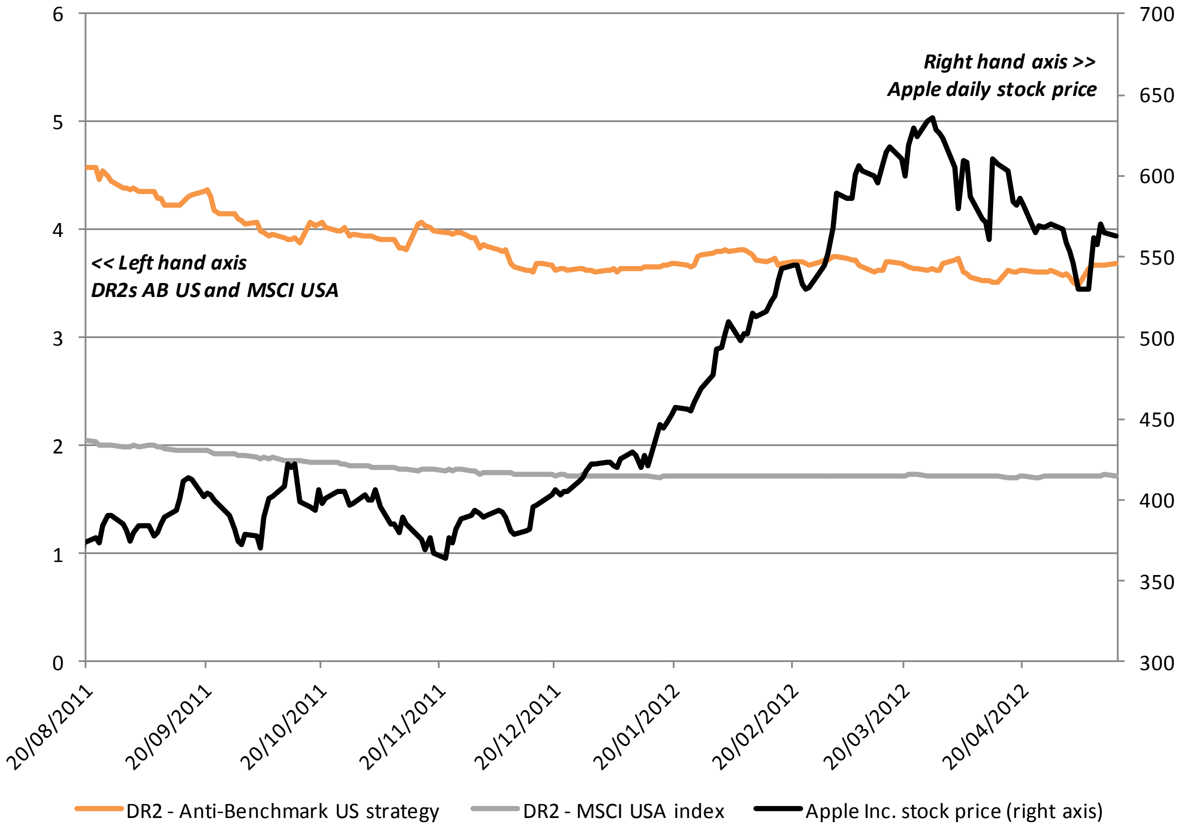
	Average AB US stocks	**Apple**	**Average MSCI US stocks**
Ex-ante correlation with AB US	53.9%	61.1%	70.4%
Ex-ante correlation with MSCI US	51.7%	65.4%	73.9%

[1]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.
[2] The Anti-Benchmark Emerging Markets Equity strategy filters the reference index to the 200 largest market capitalizations.

Indeed, as set out in TOBAM's working article "Properties of the Most Diversified Portfolio," any stock *not held* by the MDP is necessarily *more* correlated to the MDP than any stock belonging to it. This brings us to an equally important point: without needing to hold Apple, the AB US portfolio is nonetheless exposed to the Apple risk factor. Adding Apple to the AB portfolio would in fact decrease diversification.

Finally, the rise in Apple's stock price corresponds to a period of declining diversification for the MSCI USA universe. Comparing Diversification Ratios *squared* (DR2s) for the benchmark and the portfolio reveals that the available diversification for the market has decreased over the past year, and concentration has increased, as observed in the benchmark's ever-increasing allocation to Apple, as well as to IT and Technology stocks:

Diversification Ratios squared vs. Apple stock price
Year ended May 31, 2012



Once this concentration begins to reverse course, we expect the resulting increase in available diversification to be favorable for Anti-Benchmark strategies, which do not target a specific characteristic, such as attractive valuations, low volatility, or low tracking error, but rather the mix of stocks that maximizes the portfolio's Diversification Ratio, which in turn aims to deliver competitive performance and lower volatility.

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 $2.3 billion via its Anti-Benchmark strategies for institutional clients worldwide. Its team includes sixteen financial professionals based in Paris, Los Angeles and Amsterdam (31.03.2012).

Contacts:

Head of Business Development
Christophe Roehri
+33 1 53 23 41 60
Christophe.Roehri@tobam.fr

TOBAM North America
Steve Sapra, Ph.D., CFA
+1 646 240 4660
Steve.Sapra@tobam.fr

Benelux
Morella Hessels
+31 203 012 106
Morella.Hessels@tobam.fr

United Kingdom
Laura Vu Thien
+33 1 53 23 41 65
Laura.VuThien@tobam.fr

Client Service
Elizabeth Breaden
Tel. +33 1 53 23 41 56
ClientService@tobam.fr

TOBAM Marketing Partners

Nordics - Paxstone Capital LLP
Kasper Kemp Hansen
Tel. +45 36 95 97 00
kasper.hansen@paxstone.com

Canada - Investeam
Nancy Nightingale
Tel. +1 416 860 9490
nancy.nightingale@investeam.ca

Australia & NZ - Phoenix Capital Advisory Ltd.
Mark Jackson mark.jackson@phoenixcap.com.au
Matthew Wormald matt.wormald@phoenixcap.com.au
Tel. +612 9947 9781

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