

DIVERSIFICATION DASHBOARD

January 2016

Diversification Ratios

TOBAM's Diversification Ratio (DR) measures to what extent a portfolio is diversified. The DR ² (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 ² , the table shows the DR ² of a well-diversified portfolio, and the fraction of available diversification used by the index.	Universe	DR ² Index diversification	DR ² Maximum diversification	% diversification used by index
		MSCI All Countries World	4.11	12.14
	MSCI World	3.71	10.71	34.6 %
	MSCI Emerging Markets	4.77	8.32	57.4 %
	MSCI Canada	3.67	7.86	46.7 %
	MSCI US Equity	2.49	5.56	44.9 %
	MSCI Pacific Ex-Japan	2.31	5.44	42.5 %
	MSCI Japan	2.12	3.99	53.0 %
	MSCI EMU	1.73	3.68	46.9 %
	MSCI UK Equity	2.16	3.58	60.3 %
	BofA Merrill Lynch US Corporate & HY	2.86	3.95	72.4%

Source: TOBAM, figures as of December 31, 2015

The year 2015 in review – a tale of risk and concentration

We present in this Dashboard a discussion of the Anti-Benchmark[®] strategies performance in 2015. This has been a difficult year for global equity markets as global macroeconomic risk factors have crystalized, particularly in the second half of the year. As a result, some markets have concentrated, as illustrated by the decline of their Diversification Ratios. While two Anti-Benchmark[®] strategies have been significantly impacted in terms of relative performance, namely the Anti-Benchmark US and World equity strategies, most Anti-Benchmark strategies (64%) outperformed their respective benchmarks in 2015, after 80% in 2014 and 66% in 2013 (please refer to Figure 2 on page 3).

Significant market concentrations have been highlighted by many market participants, amid growing concern on the high valuations of a narrow set of outperforming stocks. In fact, the markets where benchmarks concentrated the most were US equities and global developed equities, which have a large exposure to the US markets. The popularity of expressions such as FANGs or "Nifty nine" in the press is a reflection of the increasing awareness of professional investors about that phenomenon.

Aside from the US, the Anti-Benchmark[®] performance has been generally strong, most notably in Emerging Markets protecting the investor against the collapse of China in recent months, but also by producing significant, positive relative returns in Japan, Pacific ex-Japan, UK, Canada and Korea. We also want to highlight the continuing positive performance of the Anti-Benchmark[®] US Credit strategy, within probably the most difficult environment for corporate and high yield bonds for many years.

As we have discussed in the past, the process of market concentration has its limits.

Indeed, following sharp market concentration, either the rest of the market catches up with the initial leaders, or the momentum of the narrow list of names reverses, and in both cases the Anti-Benchmark is well positioned to provide excess performance. We consider that it is very unlikely that the benchmark

concentrates forever: there is an element of mean reversion following very high levels of concentration, with the benchmark reaching very low absolute levels of DR.

Over the last quarter of 2015 we have observed a mild but sustained increase in diversification ratios in most markets. In this context, the Anti-Benchmark® strategies performances could profit, particularly in a deteriorating risk environment.

1. Market backdrop

Global stock market performances have been under the effect of major risk factors, with the MSCI US and World ending nearly flat, and the MSCI EM dropping by -14.92%. The best performers have been European and Japanese stocks.

Figure 1: Equity market performances over 2015

Market	Currency	Dec, 2014 to Dec, 2015	Volatility
MSCI USA	USD	0.69%	15.41%
MSCI EMU	EUR	9.81%	21.57%
MSCI Japan	JPY	9.93%	20.09%
MSCI World	USD	-0.87%	13.14%
MSC EM	USD	-14.92%	16.16%

Daily TR Net Returns – Source: Bloomberg & TOBAM

Two major risk factors have been full in play over the year. The first one encompasses the slowdown in China, the decline in commodity prices, and the ensuing pressure on emerging markets (compounded by the stronger USD).

The second main risk driver is the Central Banks divergence (Fed Funds hike, ECB QE, Abenomics in Japan), which is far from being resolved.

2. Anti-Benchmark strategies Performance over 2015

Following strong relative returns in most markets in 2013 and 2014, the Anti-Benchmark range delivered strong returns in 2015, except for the AB US strategy, which in turn impacted the AB World strategy because of its significant US portion.

As detailed in Figure 2, in 2015, Anti-Benchmark strategies consistently reduced volatility in all equity markets but generated nuanced absolute/relative returns depending on the regions:

Figure 2: Anti-Benchmark strategies – Full year performance

	2015			2014			2013		
	Performance		Vol	Performance		Vol	Performance		Vol
	YTD	Delta		YTD	Delta		YTD	Delta	
AB EM Equity (USD)	-9.78%	5.14%	14.90%	-0.38%	1.81%	9.25%	1.47%	4.07%	11.56%
<i>MSCI Daily TR Net Emerging Markets</i>	-14.92%		16.70%	-2.19%		11.62%	-2.60%		13.63%
AB World Equity (USD)	-7.53%	-6.66%	12.18%	7.91%	2.97%	8.17%	31.14%	4.46%	9.46%
<i>MSCI Daily TR Net World USD</i>	-0.87%		13.61%	4.94%		9.48%	26.68%		10.23%
AB All Countries World Equity (USD)*	-2.95%	-0.58%	11.52%	5.20%	1.04%	7.31%	1.89%	-0.20%	n/a
<i>MSCI AC World Daily TR Net USD</i>	-2.36%		13.41%	4.16%		9.20%	2.09%		
AB US Equity (USD)	-10.69%	-11.37%	15.14%	14.32%	1.62%	11.77%	39.84%	8.05%	12.05%
<i>MSCI Daily TR Net USA Local</i>	0.69%		15.94%	12.69%		11.86%	31.79%		11.35%
AB Euro Equity (EUR)	9.29%	-0.53%	18.51%	9.49%	5.17%	12.07%	25.50%	2.13%	10.04%
<i>MSCI Daily TR Net EMU Local</i>	9.82%		22.02%	4.32%		15.89%	23.36%		14.79%
AB Japan Equity (JPY)	13.21%	3.27%	18.06%	9.05%	-0.44%	15.04%	50.24%	-4.34%	18.92%
<i>MSCI Daily TR Net Japan Local</i>	9.93%		21.20%	9.48%		19.76%	54.58%		25.57%
AB Canada Equity (CAD)	-6.66%	1.66%	12.70%	11.55%	1.00%	9.37%	21.14%	8.15%	8.38%
<i>Benchmark**</i>	-8.32%		14.90%	10.55%		10.69%	12.99%		10.10%
AB Korea (KRW)***	12.82%	14.32%	14.03%	-	-	-	-	-	-
<i>KOSPI 200</i>	-1.50%		13.39%						
AB Pacific Ex-Japan Equity (USD)	-7.23%	1.24%	13.91%	5.45%	5.92%	9.29%	0.32%	-5.17%	10.93%
<i>MSCI Daily TR Net Pacific Ex Japan</i>	-8.47%		18.92%	-0.47%		11.51%	5.49%		14.21%
AB UK Equity (GBP)	3.27%	5.47%	15.78%	-1.07%	-1.57%	11.17%	18.76%	0.33%	10.82%
<i>MSCI Daily TR Net UK Local</i>	-2.21%		17.68%	0.50%		11.54%	18.43%		12.35%
AB US Credit (USD)****	0.77%	2.15%	4.23%	2.74%	0.76%	3.12%	-	-	-
<i>BofA Merrill Lynch US Corporate & High Yield TR</i>	-1.37%		3.99%	1.98%		2.76%			

All returns are gross of fees and reflect the reinvestment of dividends and other income. Past performance is not indicative of future results.

Source: TOBAM - open-ended funds with AUM above \$10Millions as of December 31, 2015

*AB ACWI launched on December 20, 2013.

**AB Canada: Benchmark returns reflect the fund benchmark, the S&P/TSX Composite index, from March 28, 2013 to present. Benchmark returns prior to March 28, 2013 reflect the MSCI Daily TR Net Canada Local Index.

***AB Korea: based on an estimated gross of management fees return.

****AB US Credit launched on May 12, 2014.

Both the MSCI USA and World indices ended basically flat over the year but outperformed significantly the corresponding Anti-Benchmark strategies. Of note, these same two AB strategies both had strong relative performance over 2013 and 2014, with a cumulative +11.3% for AB US and +8.6% for AB World over 2 years.

The strong positive relative performance of the AB EM strategy is not an outlier. The Anti-Benchmark Canada, Pacific ex-Japan, UK and Korea have provided positive excess return and risk reduction in a context of declining markets. We can stress that the Anti-Benchmark Japan returned a positive excess return, over a period where Japan was one of the best performing markets on a global basis (both in local currency and in USD).

Two other equity strategies returned in line with their benchmark, the ACWI in the context of a mildly falling market, and the AB Euro in the context of a strongly rallying market. In both cases, volatility was reduced.

The AB US Corporate Bond and High Yield strategy returned 0.77%, outperforming its benchmark by +2.14% in 2015. It is to be emphasized that this excess return has been generated in a strongly deteriorating environment, given the rate hike by the Fed, and the spread widening in US High Yield, which has a heavy exposure to Energy and Materials sector.

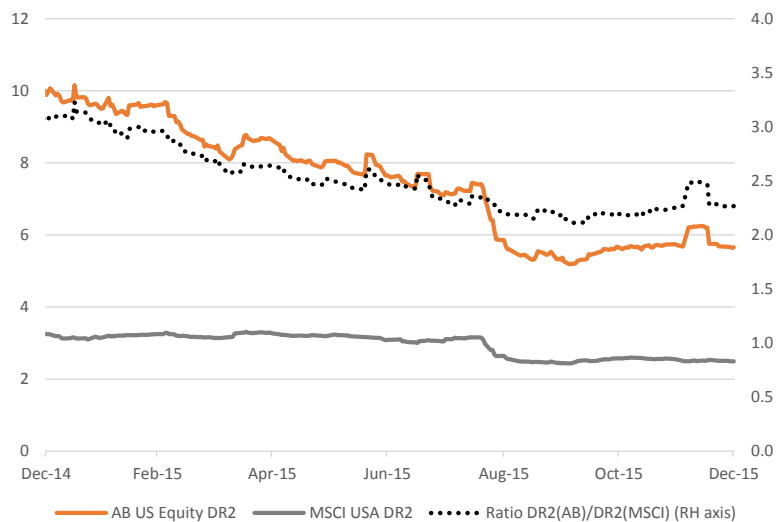
3. Market concentration and Diversification Ratios

TOBAM's Diversification Ratio (DR) 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. The ratio of DR² between the Anti-Benchmark and the benchmark illustrates the magnitude of the added diversification brought by the Anti-Benchmark vs. the benchmark.

During 2015, we have observed a decline in DR² absolute levels and in the DR² ratios (additional diversification vs. the benchmark) for most equity universes and Anti-Benchmark[®] strategies. This has been studied in depth in our December Diversification Dashboard, where we showed evidence of an overall increase in correlation between stocks. Crucially, we showed that the US market concentrated (as shown by the Concentration Ratio of the MSCI USA) while the Concentration Ratio of the Anti-Benchmark actually decreased, meaning that the AB portfolio diversification actually improved. Still, the increase in the average correlation between stocks was the dominant effect, hence the decline in the DR²s ratios.

Interestingly, looking at recent months, we see evidence of the DR²s decline slowing down or even reversing. In the case of the Anti-Benchmark US, the DR² has bottomed in early October, and started to increase slightly at the end of the year (that applies as well to the DR²s ratio).

Figure 3: Anti-Benchmark US vs MSCI USA – Evolution of DR²s
31/12/2014 – 31/12/2015



Source: TOBAM

The concentration of the US market has been outlined by many analysts and market commentators and has been a persistent factor in explaining the performance of major global indices. This market concentration has been mainly expressed in two ways:

1. First and foremost the strong performance of a small set of stocks – the FANGs or “nifty nine”, representing companies with particularly strong revenues growth.
2. Additionally, a more quantitative explanation has been to point out the strong performance of low volatility stocks, in contrast with “value” stocks. This is also applicable to the MSCI World universe – the MSCI World Minimum Volatility Index has returned 5.16% over the year, against -0.9% for the overall MSCI World.

The detailed studies on the performance of the Anti-Benchmark strategies we have produced, support the idea of the US and World, concentrating in low volatility and large market cap stocks. This corresponds with the intuition that in times of increasing risks, investors tend to search for the relative safety of low volatility securities, regardless of their valuations.

In Figure 4 we observe for example for the MSCI USA that the benchmark has rewarded the concentrations in low volatility stocks (which had an average return of 6.11%), while the returns have been significantly negative for high volatility stocks (with an average return of -9.42%). Moreover the MSCI USA structural bet in the large market cap stocks has been rewarded in 2015, with an average return of 4.28% (versus -3.05% and -5.19% on average respectively for the mid- and small-market cap segments).

Figure 4: MSCI USA returns by market capitalisation and Volatility terciles, avg. 31/12/2014 – 31/12/2015

Vol x Mkt Caps Buckets 31/12/2014 - 31/12/2015	Caps Ter1 (Small Caps)	Caps Ter2 (Mid Caps)	Caps Ter3 (Large Caps)	Average (EW)
Vol Ter1 (Low Vol)	9.83%	5.78%	2.71%	6.11%
Vol Ter2 (Mid Vol)	-0.90%	-1.62%	0.60%	-0.64%
Vol Ter (High Vol)	-24.49%	-13.31%	9.53%	-9.42%
Avg (EW)	-5.19%	-3.05%	4.28%	

Source: TOBAM & Bloomberg

4. Conclusion

The year 2015 has been a difficult one for global equity markets. The fact that major markets such as the US or the comprehensive World indices have ended with slightly negative or mildly positive returns, masks the fact that risk factors have built-up during the first half of the year, and have materialised in the second.

Concurrent with the build-up of market risk, we have observed a decline in DR² (both in absolute and relative terms), as stock correlations increased. Market concentration has manifested particularly in the case of the US, with a significant out-performance of low volatility and large cap stocks. Still, we observe how the diversification advantage of the Anti-Benchmark strategies relative to the benchmark has begun increasing in the recent months.

Interestingly, we observe that, over the past two months (between mid-November and mid-January) both the AB US and AB World strategies have demonstrated notable outperformance (about 2% and 4% respectively) against their market-cap weighted benchmark.



For more information

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