

## DIVERSIFICATION DASHBOARD

July 2015

*“Dedicated to our friend RK, with our gratitude.”*

*From all of us,*

### Diversification Ratios®

TOBAM's Diversification Ratio® (DR) 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.	Universe	DR <sup>2</sup> Index diversification	DR <sup>2</sup> Maximum diversification®	% diversification used by index
		MSCI All Countries World	5.42	20.26
	MSCI World	4.71	16.93	27.9 %
	MSCI Emerging Markets	7.14	13.09	54.6 %
	MSCI Canada	4.47	9.22	48.5 %
	MSCI Pacific Ex-Japan	3.11	8.49	36.7 %
	MSCI US Equity	3.09	7.65	40.4 %
	MSCI Japan	2.45	6.25	39.2 %
	MSCI UK Equity	2.83	4.57	61.9 %
	MSCI EMU	1.93	4.51	42.9 %
	MSCI Australia	2.37	4.06	58.5 %

Source: TOBAM, figures as of June 30, 2015

### The Anti-Benchmark Emerging Markets Equity Strategy celebrates its 4th anniversary

*Most investors associate emerging markets with higher geopolitical, sector and idiosyncratic risk than is found in developed markets, offering potentially higher returns for these higher risks. In fact, this multitude of risk factors allows for significant diversification potential.*

*The emerging equity markets are deeper and broader than indicated by their “representative” market indices.*

*The implementation of TOBAM's Maximum Diversification® approach to emerging markets in 2011 was the results of a client's request in search for higher diversification in its emerging equities allocation and low correlation with other approaches.*

*The strategy since launch has demonstrated strong diversification benefits and track record. TOBAM's Anti-Benchmark Emerging Markets Equity is now one of TOBAM's flagship strategies with over US\$ 2 billion under management.*

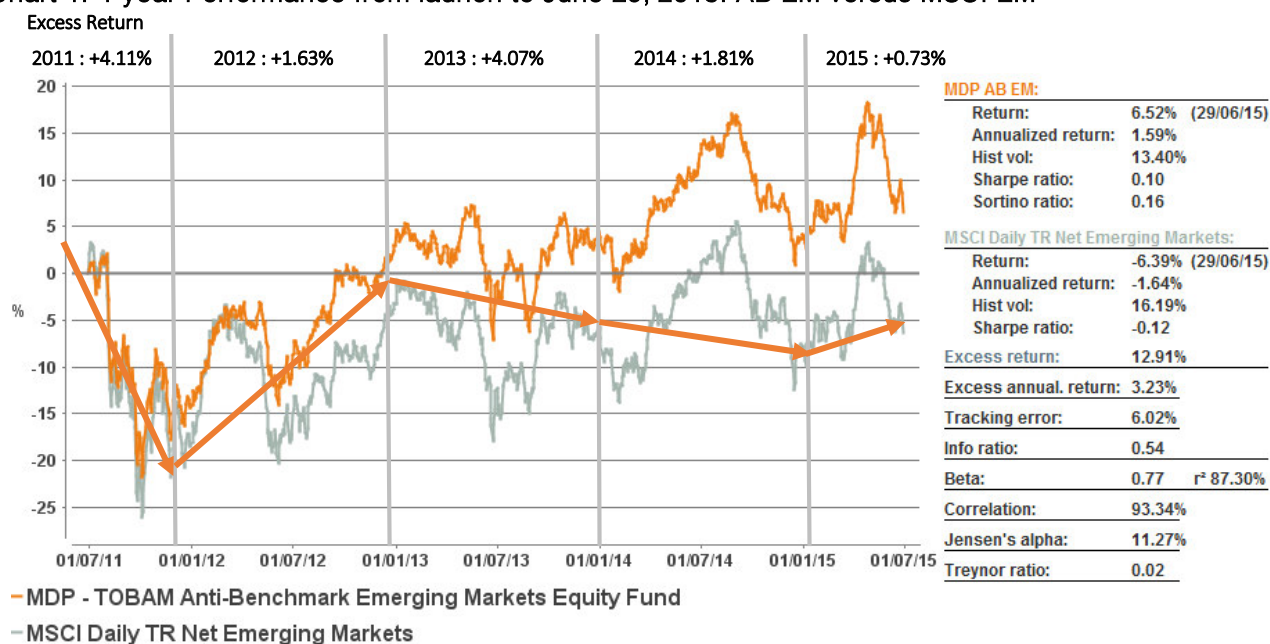
## 1. TRACK RECORD

### *Robust behaviour in all market environments*

Since the launch of the Anti-Benchmark Emerging Markets Equity strategy on June 29, 2011, global emerging markets have had a turbulent ride.

The 4-year track record allows for rich insight of the behaviour of the strategy in different market environments: bull (2012/2015), bear (2011) and flat market (2013/2014) (see Chart 1 & Table 2).

Chart 1: 4-year Performance from launch to June 29, 2015: AB EM versus MSCI EM



Source: TOBAM – Figures gross of fees in USD- Past performance are not indicative of future results

Since inception, the Anti-Benchmark Emerging Market equity strategy returned 6.52%, outperforming the MSCI EM index by +12.91% (3.23% of annualized performance gross of fees). Of note is the significant reduction in volatility: -17%.

Since its launch, AB EM improved return and reduced risk vs. its benchmark in every single calendar year:

Table 2: Excess Return, Volatility and Sharpe Ratio Differentials: AB EM versus MSCI EM

AB EM – MSCI EM	2011*	2012	2013	2014	2015**
Excess Return	+4.11%	+1.63%	+4.07%	+1.81%	+0.73%
Volatility Reduction	-16%	-24%	-15%	-20%	-6%
MSCI EM's return	-18.16%	+18.22%	-2.60%	-2.19%	+1.56%

Source: TOBAM – Figures gross of fees in USD - Past performance are not indicative of future results  
\*: From June 29, 2011 to December 31, 2011. \*\*: Data for 2015 are as of June 29, 2015.

## 2. DIVERSIFICATION BENEFITS

### *Emerging Markets Equities: a strong diversification potential*

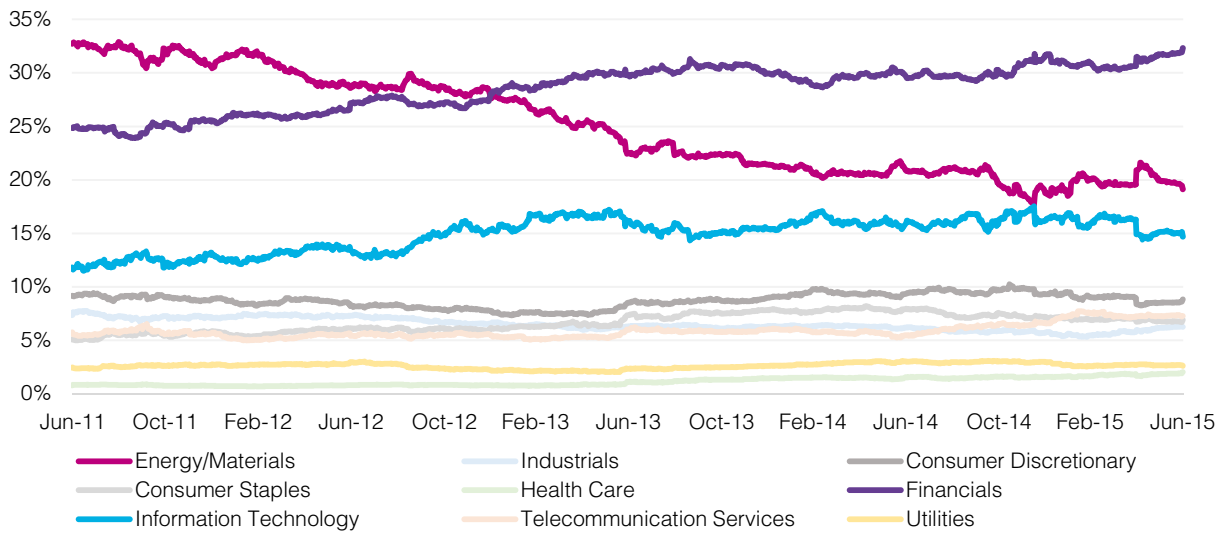
#### a. Strong Concentrations of Risks in the MSCI EM

The MSCI Emerging Markets index, like most cap-weighted benchmarks, suffers from large biases. Chart 3 shows the dynamic historical bets of the MSCI Emerging Markets: from Energy & Materials to Financials more recently.

The bets in sectors that are historically volatile and highly correlated to economic cycles and equity markets in general, raise significant issues of risk concentrations, notably for passive management or active managers that are close to the benchmark.

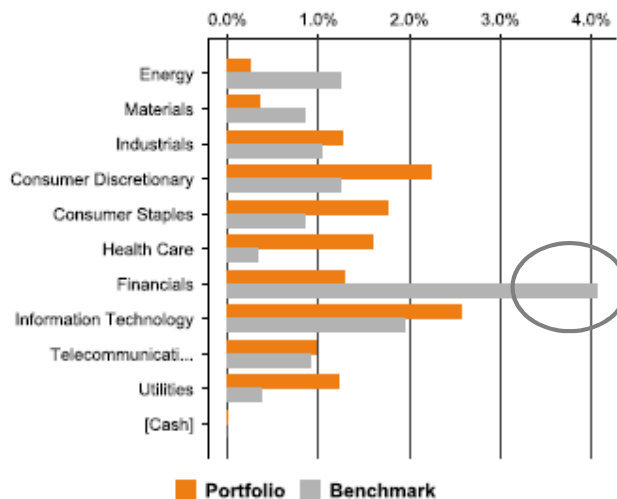
In this context, the merits of the Anti-Benchmark strategy lie in its ability to diversify among all available sources of risk (see chart 4), and capture the full equity risk premium.

**Chart 3: MSCI Emerging Markets: Sector Contribution to Volatility ITD**



Source: TOBAM

**Chart 4: Sources of Volatility 3M (as of June 29, 2015)**



Source: TOBAM

**b. Anti-Benchmark Emerging Markets Equity: a better diversifier to the MSCI World than the MSCI EM**

While some investors would not question the benefits of allocating to Emerging Markets for diversification, Table 5 shows that reaping the entire diversification potential of Emerging Markets requires going further than replicating the MSCI EM index.

The table below compares correlations between the MSCI World, MSCI Emerging Markets and the AB Emerging Markets equity portfolio:

**Table 5: Global and Emerging Markets equities correlations:  
Anti-Benchmark Emerging Markets vs. the MSCI EM and MSCI World**

Investment Universe	MSCI World	MSCI EM	Anti-Benchmark EM
MSCI World	100%		
MSCI EM	67%	100%	
Anti-Benchmark EM	58%	93%	100%

*Source: TOBAM. Calculations made from June 29, 2011 to June 29, 2015 (daily data).*

The MSCI Emerging Markets index's 67% correlation to the MSCI World index is significantly higher than the 58% correlation between the AB Emerging Markets portfolio and the MSCI World. This can be attributed to the reference index's high exposure to one of the most influential industry sector globally: Financials.

The AB Emerging Markets Equity portfolio, which explicitly seeks to avoid such biases, is thus significantly more diversifying than the MSCI Emerging Markets index.

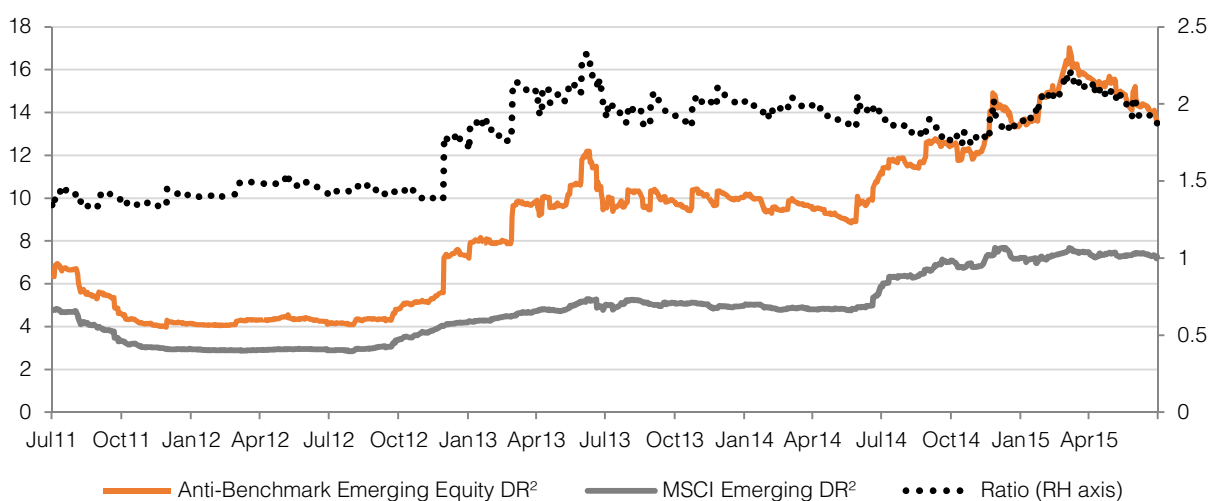
**c. The current diversification opportunities in emerging equity markets**

The diversification gap between the benchmark and the Anti-Benchmark Emerging Markets Equity is structural, as illustrated by the levels of the Diversification Ratios squared (DR<sup>2</sup>) in Chart 6.

The Diversification Ratio enables to measure the level of diversification of any portfolio on a very simple and comparable way. The Diversification Ratio <sup>2</sup> measures the number of independent effective sources of risk to which a portfolio is exposed.

However it is worth noting that as of June 29, 2015, only 50% of the available diversification is captured by the benchmark.

**Chart 6: Long-term Diversification:  
DR<sup>2</sup>s for the AB Emerging Markets Equity strategy and the MSCI EM index**



*Source: TOBAM.*

### 3. A SUSTAINABLE STRATEGY

**“Cost-effective, high capacity, responsible”**

#### a. Robust and cost-effective for the long term

A number of implementation difficulties can confront traditional emerging markets equity investors.

- The task of researching every single emerging market stock across different and heterogeneous regions can be cost prohibitive and even confine managers to a regional specialization, whereas the opportunity set is global.
- The difficulty of uncovering and providing access to the best investment opportunities in the Emerging Markets universe globally, is overcome by applying a systematic methodology that targets maximum diversification<sup>®</sup> while optimizing turnover and penalizing illiquidity to all stocks in the MSCI universe. The Anti-Benchmark portfolio delivers a highly scalable and cost-effective access to this attractive investment universe.

The Most Diversified emerging markets equity strategy is aiming at capturing the different risk factors underlying these equity returns, which translates into an investment strategy, reaping greater investment returns while reducing portfolio risk.

A quarterly rebalancing frequency is adopted to take into account the implementation specifics of the emerging markets, allowing for an annualized turnover ITD below 40%.

#### b. High Capacity

Traditional emerging market managers with tracking error constraints are unnecessarily exposing their portfolios to the index's significant price swings at each index rebalancing. An additional roadblock to effective emerging markets equity implementation is capacity limitations.

Anti-Benchmark implementation bypasses both the cap-weighted index's bets and the capacity problems inherent in managing against this index. The Anti-Benchmark is not only indifferent to the cap-weighted index composition, and thus to its implementation challenges, but it is also relatively independent to which securities are included; the Anti-Benchmark can hold different mixes of stocks and yet remain very highly diversified.

#### c. Responsible

Since its beginnings, TOBAM has decided that sustainable development would be explicitly core to its values. Our clients have a long-term approach to investing and our sustainable way addresses these concerns. TOBAM's sustainable way relies on two pillars: the Sustainable Responsible Investment approach and our internal corporate engagement and actions.

TOBAM offers a quantitative management style which integrates socially responsible investment criteria into all open-ended portfolios since 2007. TOBAM promotes the ESG criteria included in the United Nations Principles for Responsible Investment by applying the exclusion list of the Ministry of Finance of Norway.

The launch of the Anti-Benchmark Emerging Markets Equity strategy in 2011 led TOBAM to consider its investments in emerging countries and the human rights track record of some governments.

Given that fundamental rights are the principal source of creativity, innovation, fight against corruption and economic growth, TOBAM supports Amnesty International and Human Rights Watch. We decided to support these organizations whose sole objective is to promote human rights in the world, by donating a share of the profits generated by TOBAM Anti-Benchmark Emerging Markets Equity fund.

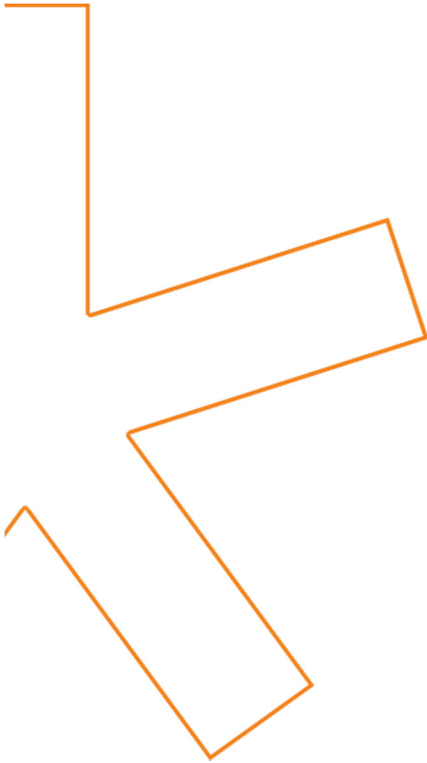
Our engagement with Amnesty International and Human Rights Watch is core to our investment philosophy and representative of the way we consider our long-term investor's responsibilities.

#### **4.CONCLUSION**

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On the 4-year track record, we observe that the Anti-Benchmark Emerging Markets Equity fund has achieved its objective of capturing the emerging markets equity risk premium with lower risk, by applying TOBAM's patented Anti-Benchmark methodology to maximize diversification across the investment universe.

- Diversified exposure to emerging markets
- Outperformance in both bear and bull markets since inception
- Risk reduction of -17%
- A stronger diversifier to developed equities than the MSCI EM index
- A truly global, high-capacity and cost-effective approach to emerging markets equities



## 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 \$8.7 billion (June 2015) via its Anti-Benchmark® strategies for institutional clients worldwide. Its team includes 36 financial professionals.

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