Anti-Benchmark Credit

The Benefits of Diversification in Credit

Our mission: “Provide rational and professional solutions to long term investors in the context of efficient markets”

May 2019
Agenda

- Introduction to TOBAM
- Anti-Benchmark® Credit Investment Philosophy and Process
- Benefits of Diversification in Credit
- Conclusion
Profile

The company:
Independent and employee-owned
- Created in 2005
- CAD$13.5 billion under management.
- 53 financial professionals, 19 nationalities.

The founder:
Yves Choueifaty, President & CIO (25 years investment experience), previously:
- CEO of Credit Lyonnais Asset Management (AuM €70bn)
- Graduated in 1992 from ENSAE in Statistics, Actuarial Studies, Finance and Artificial Intelligence

AuM by clients geography

AuM by clients type

Source: TOBAM. Figures as of March 29, 2019
Granted Patents

The Director of the United States Patent and Trademark Office

The United States of America

The United States Patent

Goes to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America and if this invention is a process, the right to exclude others from using, offering for sale or selling throughout the United States of America or importing into the United States of America, products made by that process for the term set forth in 35 U.S.C. 154(a)(2) or 154(d), subject to the payment of maintenance fees as provided in 35 U.S.C. 41(b).

David J. Kappos
Commissioner of Patents and Trademarks
Awards

2018

“European Smart Beta Manager of the Year”
Funds Europe Awards 2018, London

2017

“European Asset Management Firm of the Year”
Funds Europe Awards 2017, London

“Best Investment Strategy Firm (France) ” & Most Innovative Flex -Cap Equity Fund: Anti-Benchmark Global
Funds Awards 2017 – London

2016

“AM Leader of the Year”
Grands Prix de la Gestion d’Actifs 2016 - Paris

“European Asset Manager of the Year”
Funds Europe Awards 2016 – London

2015

TOBAM awarded twice in 2015 for “pioneering role in the foundation of the alternative/smart beta movement”

“Equities Manager of the Year”
CIO Industry Innovation Awards 2015 New York

“CIO of the Year”
Funds Europe Awards 2015 London

Awards are not indicative of TOBAM’s future performance.
TOBAM’s Sustainable Approach

Since its creation, TOBAM has decided that sustainable development would be explicitly core to its values. We aim at protecting the long-term interests of our clients and stakeholders by taking a responsible approach in our investments and in our own corporate practices:

Investing Responsibly

Exclusion Policy

✓ Applied to most AUM since 2007
✓ Based on the exclusion list of PRI founding member Norges Bank and some other leading institutions

Responsible Shareholder & Engagement

✓ Proprietary Voting Policy & Engagement with excluded companies

Carbon Footprint Reduction

✓ A systematic reduction of our relative carbon footprint of at least 20% applied to all TOBAM Equity portfolios vs. their respective benchmarks

A Responsible Company

Managing TOBAM’s Environmental Impact (E)

✓ 150% of TOBAM’s carbon footprint is offset via reforestation projects

Promotion of Social Progress (S)

✓ Human Rights NGO’s donation mechanism in our EM equity fund

Responsible & Collaborative Governance (G)

✓ Employee shareholding program & alignment of interest; Sustainability committee to oversee all SRI & CSR topics

Commitment to Industry Initiatives

✓ For ex, engagement initiative with Dublin Stock Exchange for ESG disclosure by listed companies
Agenda

* Introduction to TOBAM
* Anti-Benchmark® Credit Philosophy and Investment Process
* Benefits of Diversification in Credit
* Conclusion
What is the Maximum Diversification® approach?

Maximum Diversification®: a quantitative investment approach based on a unique principle – building the Most Diversified Portfolio®

In order to maximize diversification, we need a measure:

- **TOBAM founded a metric for diversification: the Diversification Ratio® (DR)**
- The Maximum Diversification® approach: its unique objective is to increase the DR

The Maximum Diversification® Indices apply TOBAM’s unique investment philosophy: outperform the market cap-weighted index with less risk, by increasing diversification

- Long-only, non leveraged and fully invested
The MDP® defines and increases diversification

- The MDP® aims to deliver broad equity market exposure that provides superior performance with lower risk
- MDP® attempts to capture the full market risk premium
- We believe the higher returns result from better capturing the risk premium

Key Risks: The value of your investment and the income from it will vary and your initial investment amount is not guaranteed. Allocations are subject to change.
Cap-weighted indices take on heavy structural biases...

- As stocks appreciate, the greater their index representation, and conversely so
- The greater the imbalance, the greater the impact of changes in price (volatility)
- Using a biased benchmark as a reference carries heavy (and costly) implicit bets
- These implicit bets evolve dynamically over time

US Equity Market - Sector Weights

Source: TOBAM calculations - Figures as of March 31, 2019. Key Risks: The value of your investment and the income from it will vary and your initial investment amount is not guaranteed. Allocations are subject to change. Of note, GICS introduced a new sector classification in September 2018, that impacted US sector weights. Please contact us for TOBAM’s view on the reclassification and access to our dedicated dashboard on the topic.
What is the problem we are trying to resolve?

*Market value-weighted indices tend to take on heavy structural biases...*

BofA Merrill Lynch US IG & High Yield Corporate Index: Risk-weighted sector weights

Source: Merrill Lynch, MSCI, Bloomberg, TOBAM. **Key Risks**: The value of your investment and the income from it will vary and your initial investment amount is not guaranteed. Allocations are subject to change. DTS weighted data from January 1998 to March 2019. The index data referenced herein is the property of Merrill Lynch, Pierce, Fenner & Smith Incorporated (“BoAML”) and/or its licensors and has been licensed for use by TOBAM. BoAML and its licensors accept no liability in connection with its use.
...which can destroy value

- Market benchmarks allocate risk dynamically over time and as such are not truly diversified:

  + + + +

  Wealth creation?

- The market cap-weighted benchmark can also be described as a Dynamic Risk Allocator

Key Risks: The value of your investment and the income from it will vary and your initial investment amount is not guaranteed.
What is Diversification?

Risk of the combination

\[ \sigma_{(80\% A+20\% B)} < 80\% \sigma_A + 20\% \sigma_B \]

If A & B, two different assets (not perfectly correlated)

\[ \Leftrightarrow \rho_{A,B} \neq 1 \]

How to measure Diversification?

The Diversification Ratio®

\[ DR(P) = \frac{\text{Combination of Risks}}{\text{Risk of the Combination}} \]

\[ = \frac{(w_1 \sigma_1 + w_2 \sigma_2 + \ldots + w_n \sigma_n)}{\sigma_P} \]

\[ \sigma_i = \text{Risk of asset } i \text{ measured by Duration Time Spread (DTS)} \]

\[ P = (w_1, w_2, \ldots w_n) = \text{The vector of asset weights} \]

\[ \rho = \text{Correlation of issuers estimated on equities} \]

Key Risks: The value of your investment and the income from it will vary and your initial investment amount is not guaranteed.
Historical Performance

Anti-Benchmark® US Credit Strategy Gross Performance
Inception (May 12, 2014) to April 30, 2019

Warning: Past performance is not an indicator or a guarantee of future performance. The value of your investment and income received from it can go down as well as up and you may not get back the full amount invested. Performance details provided are in USD and may include reinvested dividends. Performance returns and/or charts illustrating performance provided on this page are gross of fees. The clients return will be reduced by the advisory fees and any other expenses it may incur in the management of its account. Advisory fees are described in Part II of the advisors Form ADV. The net performance of AB US Credit over the live period ending April 30, 2019 (including management/advisory, administrative & subscription fee) would be 18.22%. The net performance of AB Global High Yield over the live period ending April 30, 2019 (including management/advisory, administrative & subscription fee) would be 13.06%. Source: TOBAM, Merrill Lynch, Pierce, Fenner & Smith Incorporated ("BofAML"), used with permission. BofAML permits use of the BofAML indices and related data on an “as is” basis, makes no warranties regarding same, does not guarantee the suitability, quality, accuracy, timeliness, and/or completeness of BofAML indices or any data included in, related to, or derived therefrom, assumes no liability in connection with the use of the foregoing, and does not sponsor, endorse, or recommend TOBAM or any of its products or services.
Agenda

- Introduction to TOBAM
- Anti-Benchmark® Credit Investment Philosophy and Process
- Benefits of Diversification in Credit
- Conclusion
Benefits of Diversification in Credit

The Anti-Benchmark® Credit Strategies provide a way to manage credit exposure in a unique and innovative fashion.

Benefits of greater diversification can be illustrated in several distinctive ways:

1. **Performance**: Greater diversification helps to collect the full risk premium of an asset class

2. **Mitigating default risks**: Diversification is a way to avoid getting caught in a default wave

3. **Diversifying away from the market’s bets**: Mitigating concentration risks within a fixed income exposure

4. **Implementing a core exposure**: Lowering sensitivity to market factors as a starting point of tactical allocation
Mitigating Default Risks
A Look at the Benchmark Default Rate

- Default is a **concentrated phenomenon**
- Passive investing tends to **maximize default exposure** at the worst time

Diversifying away from the market’s concentration can provide investors with a way to effectively mitigate default risk.

**Key Risk:** The value of your investment and the income from it will vary and your initial investment amount is not guaranteed. Allocations are subject to change.
Example: Diversifying Away from the Market Bets - The Valeant Meltdown Illustration

The Anti-Benchmark® is the combination of a Holding and its “Anti-Holding” which protects it against its own mistakes: it reduces the stock specific risk.
Implementing a Core Exposure (1)
The Case of AB Global High Yield

Because Anti-Benchmark® credit strategies tend to exhibit lower sensitivity to market indicators than passive investment products...

Source: TOBAM, CBOE, ICE-BoA, MSCI, Bloomberg, HS-Markit, Blackrock.
Correlations reflect back tested data from September 28, 2008 to March 13, 2017, plus live data for the TOBAM AB Global High Yield (AB) from March 13, 2017 to December 28, 2018. Back tested results are for information purposes only. They are intended to illustrate how the Strategy may have behaved had it been launched prior to March 13, 2017.
Key Risks: The value of your investment and the income from it will vary and your initial investment amount is not guaranteed. Allocations are subject to change.
Implementing a Core Exposure (2)
A Framework

...very diversified strategies are an ideal candidate to be used as a core investment, to be combined with conviction/ tactical bets (satellites).

Rational Answer: Core / Satellite approach with the AB as Core

Key Risks: The value of your investment and the income from it will vary and your initial investment amount is not guaranteed. Allocations are subject to change.
Agenda

✶ Introduction to TOBAM
✶ Anti-Benchmark® Credit Investment Philosophy and Process
✶ Benefits of Diversification in Credit
✶ Conclusion
Conclusion

The Anti-Benchmark® Credit strategies aim at enhancing performance compared to market value weighted benchmarks through greater diversification

✓ TOBAM’s investment process and philosophy
✓ The rigor of a quantitative approach
✓ The fundamental expertise of dedicated portfolio managers

A way to extract the whole credit risk premium over a market cycle

Key Risks: The value of your investment and the income from it will vary and your initial investment amount is not guaranteed. Allocations are subject to change.
About TOBAM

TOBAM is an asset management company offering innovative investment capabilities designed to increase diversification. Its mission is to provide rational and professional solutions to long term investors in the context of efficient markets.

The Maximum Diversification® approach, TOBAM’s flagship investment process founded in 2006, is supported by original, patented research and a mathematical definition of diversification and provides clients with diversified core exposure, in both the equity and fixed income markets.

In line with its mission statement and commitment to diversification, TOBAM also launched a separate activity on cryptocurrencies in 2017.

TOBAM currently manages US$10.2 billion (at March 29, 2019). TOBAM’s team is composed of 53 professionals.

For more information, visit www.tobam.fr

Contacts:

Paris
49-53, Avenue des Champs-Elysées
75008 Paris
France

New York

Dublin

Hong Kong

Client Service
clientservice@tobam.fr
Disclaimer

This material is solely for the attention of institutional, professional, qualified or sophisticated investors and distributors. It is not to be distributed to the general public, private customers or retail investors in any jurisdiction whatsoever. This document is intended only for the person to whom it has been delivered.

Funds and/or SICAV specific information may have been provided for information solely to illustrate TOBAM’s expertise in the strategy. Funds or the SICAV that might be mentioned in this document may not be eligible for sale in some states or countries and they may not be suitable for all types of investors. In particular, TOBAM funds are not registered for sale in the US, and this document is not an offer for sale of funds to US persons (as such term is used in Regulation S promulgated under the 1933 Act). This material is provided for information purposes only and does not constitute a recommendation, solicitation, offer, advice or invitation to purchase or sell any fund, SICAV or sub-fund or to enter in any transaction and should in no case be interpreted as such, nor shall it or the fact of its distribution form the basis of, or be relied on in connection with, any contract for the same.

The information provided in this presentation relates to strategies managed by TOBAM, a French investment adviser registered with the U.S. Securities and Exchange Commission (SEC) under the U.S. Investment Advisers Act of 1940 and the Autorité des Marchés Financiers (AMF) and having its head office located at 49-53 avenue des Champs Elysées, 75008 Paris, France. TOBAM’s Form ADV is available free of charge upon request. In Canada, TOBAM is acting under the assumed name “TOBAM SAS Inc.” in Alberta and “TOBAM Société par Actions Simplifiée” in Québec.

All rights in the TOBAM Maximum Diversification Index Series vest in TOBAM. The use of TOBAM Maximum Diversification Index Series to create financial products requires a license granted by TOBAM. The information shall not be used to verify or correct other data, to create indices, risk models, or analytics, or in connection with issuing, offering, sponsoring, managing or marketing any securities, portfolios, financial products or other investment vehicles without TOBAM’s prior consent.

Investment involves risk. All investors should seek the advice of their legal and/or tax counsel or their financial advisor prior to any investment decision in order to determine its suitability. The value and income produced by a strategy may be adversely affected by exchange rates, interest rates, or other factors so that an investor may get back less than he or she invested.

Past performance and simulations based on thereon are not indicative of future results nor are they reliable indicators of future performance. Any performance objective is solely intended to express an objective or target for a return on your investment and represents a forward-looking statement. It does not represent and should not be construed as a guarantee, promise or assurance of a specific return on your investment. Actual returns may differ materially from the performance objective, and there are no guarantees that you will achieve such returns. Back tests do not represent the results of an actual portfolio, and TOBAM does not guarantee the accuracy of supporting data. The constraints and fees applicable to an actual portfolio would affect results achieved.

This material, including back tests, is based on sources that TOBAM considers to be reliable as of the date shown, but TOBAM does not warrant the completeness or accuracy of any data, information, opinions or results. TOBAM has continued and will continue its research efforts amending the investment process from time to time accordingly. TOBAM reserves the right of revision or change without notice, of the universe, data, models, strategy and opinions. TOBAM accepts no liability whatsoever, whether direct or indirect, that may arise from the use of information contained in this material. TOBAM can in no way be held responsible for any decision or investment made on the basis of information contained in this material. The allocations and weightings, as well as the views, strategies, universes, data, models and opinions of the investment team, are as of the date shown and are subject to change.

This document and the information herein is disclosed to you on a confidential basis and shall not be reproduced, modified, translated or distributed without the express written permission of TOBAM or TOBAM NORTH AMERICA and to the extent that it is passed on, care must be taken to ensure that any reproduction is in a form which accurately reflects the information presented here. This information could be provided by TOBAM NORTH AMERICA, a wholly-owned subsidiary of the TOBAM group of companies that is authorized to present the investment strategies of TOBAM, subject to TOBAM’s supervision, but is not authorized to provide investment advice.

Copyrights: All text, graphics, interfaces, logos and artwork, including but not limited to the design, structure, selection, coordination, expression, "look and feel" and arrangement contained in this presentation, are owned by TOBAM and are protected by copyright and various other intellectual property rights and unfair competition laws. Trademarks: “TOBAM,” "MaxDiv,” "Maximum Diversification," "Diversification Ratio," “Most Diversified Portfolio,” "Most Diversified Portfolios," "MDP" and “Anti-Benchmark” are registered trademarks. The absence of a product or service name from this list does not constitute a waiver of TOBAM trademark or other intellectual property rights concerning that name. Patents: The Anti-Benchmark, MaxDiv and Maximum Diversification strategies, methods and systems for selecting and managing a portfolio of securities, processes and products are patented or patent pending. Knowledge, processes and strategies: The Anti-Benchmark, MaxDiv and Maximum Diversification strategies, methods and systems for selecting and managing a portfolio of securities, processes and products are protected under unfair competition, passing-off and misappropriation laws. Terms of use: TOBAM owns all rights to, title to and interest in TOBAM products and services, marketing and promotional materials, trademarks and Patents, including without limitation all associated Intellectual Property Rights. Any use of the intellectual property, knowledge, processes and strategies of TOBAM for any purpose and under any form (known and/or unknown) in direct or indirect relation with financial products including but not limited to certificates, indices, notes, bonds, OTC options, warrants, mutual funds, ETFs and insurance policies (i) is strictly prohibited without TOBAM’s prior written consent and (ii) requires a license. PHZC