**EDHEC-Risk Institute: Key Figures, 2014–2015**

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<thead>
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<th>Category</th>
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<tbody>
<tr>
<td>Number of permanent staff</td>
<td>48</td>
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<tr>
<td>Number of research associates &amp; affiliate professors</td>
<td>36</td>
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<tr>
<td>Overall budget</td>
<td>€6,500,000</td>
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<tr>
<td>External financing</td>
<td>€7,025,695</td>
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<tr>
<td>Number of conference delegates</td>
<td>1,087</td>
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<tr>
<td>Number of participants at research seminars and executive education seminars</td>
<td>1,465</td>
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A Message from the Dean of EDHEC Business School
“I believe that institutional investing, such as formulating investment policies for the long term for pension funds is very much a question linked to financial economic theory and academic research and findings. At the same time, we need to find practical solutions for the day-to-day work with our portfolios and I think that EDHEC-Risk Institute is bridging those perspectives in a very good way.”

Tomas Franzén, Chief Investment Officer, Andra AP-fonden (AP2) and Chairman, EDHEC-Risk Institute’s International Advisory Board
Since 2001, EDHEC has been pursuing an ambitious policy in terms of practically relevant academic research. This policy, known as “Research for Business”, aims to make EDHEC an academic institution of reference for the industry in a small number of areas in which the school has reached critical mass in terms of expertise and research results.

Among these areas, asset and risk management have occupied privileged positions, leading to the creation in 2001 of EDHEC-Risk Institute, which has developed an ambitious portfolio of research and educational initiatives in the domain of investment solutions for institutional and individual investors. EDHEC-Risk plays a noted role in furthering applied financial research and systematically highlighting its practical uses. As part of its “Research for Business” philosophy, the research centre maintains a dialogue with professionals which benefits the industry as a whole. At the same time, its proprietary R&D provides sponsors with an edge over the competition and joint ventures allow selected partners to develop new business opportunities.

EDHEC-Risk Institute now boasts a team of close to 50 permanent professors, engineers and support staff, and counts 36 affiliate professors and research associates from the financial industry among its ranks. The year 2015 saw the EDHEC-Risk Days conference in London. The EDHEC-Princeton Institutional Money Management conference returned to New York in 2015 for its third edition. All in all, EDHEC has hosted more than 6,000 City professionals at its research seminars and conferences in London since 2003. The London and Singapore campuses are also at the heart of an ambitious executive education policy that sees EDHEC train over 10,000 senior executives and business leaders worldwide every year.

To ensure that its activities meet the highest academic standards and truly benefit the industry, EDHEC-Risk Institute subjects its activities to strict validation processes. The scientific quality and operational relevance of the centre's research programmes are guaranteed by the centre's management structure and the oversight exercised by the leading experts serving on its international advisory board.

The following pages will provide you with a brief introduction to the activities carried out by EDHEC-Risk Institute. The centre's team is available to help you analyse the ways in which you could tap into its expertise for the benefit of your organisation.

Olivier Oger,
Dean of EDHEC Business School
The Need for Investment Solutions
Amundi has continuously supported EDHEC-Risk Institute over the past years, convinced by the quality of their state-of-the-art academic contribution, including in the Smart Beta field where innovation remains very intense. The excellence of the literature produced within the “ETF and Passive Investment Strategies” research chair is of great help to investors and the industry as a whole, while enabling us to better accompany our clients in their asset allocation, with added value solutions.

Valérie Baudson, CEO, Amundi ETF, Indexing et Smart Beta
The Need for Investment Solutions

The investment industry is currently experiencing profound structural changes, in the face of new challenges that are faced by both institutional and individual investors. For pension funds in particular, the shift in most accounting standards towards the valuation of pension liabilities at market rates (mark-to-market), instead of fixed discount rates, has resulted in an increase in liability portfolio volatility. This new constraint has been reinforced in parallel by stricter solvency requirements that followed the 2000-2003 pension fund crisis, and ever stricter solvency requirements are also increasingly being imposed on insurance companies in the US, Europe and Asia.

These evolutions in accounting and prudential regulations have subsequently led a large number of corporations to close their defined-benefit pension schemes so as to reduce the impact of pension liability risk on their balance sheet and income statement. Overall, a massive shift from defined-benefit to defined-contribution pension schemes is taking place across the world. As a result, individuals are becoming increasingly responsible for making investment decisions related to their retirement financing needs, investment decisions for which they have no expertise. In this context, the investment management industry has a great responsibility in terms of the need to provide individuals with suitable retirement solutions.

In the new highly challenging environment, and given the intrinsic difficulty of delivering added value through security selection decisions alone, the relevance of the old paradigm has been questioned with heightened intensity, and a new paradigm is starting to emerge, with substantial welfare improvements expected for asset owners. This paradigm has been labelled liability-driven investing (LDI) for institutional investors, whose problems are broadly summarised in terms of their liabilities, and it has been labelled goal-based investing (GBI) for individual investors, whose problems can be fully characterised in terms of their specific consumption of bequest goals throughout their lifetime.

A variety of common meaningful goals can be identified for most individuals including wealth accumulation, financing children’s education, or generating minimum and target levels of replacement income in retirement, already mentioned as arguably the greatest challenge for most individuals. Some changes with respect to existing investment practices are needed to help meet these formidable challenges. Just as in institutional money management, the need to design an asset allocation solution that is a function of the kinds of particular risks to which the investor is exposed, or needs to be exposed to meet liabilities or to fulfil goals, as opposed to purely focusing on the risks impacting the market as a whole, makes standard approaches (which are based on balanced portfolios invested in a mixture of asset class portfolios actively and passively managed against market benchmarks) mostly inadequate.

The emergence of this novel LDI/GBI paradigm is not only a threat for traditional asset management firms, but also a source of opportunity. At the asset allocation level, we have seen that the “death of policy portfolios” has led to the development of fiduciary management services based on dynamic liability-driven investing. At the asset class level, the disappointment over expensive
The Need for Investment Solutions

active multi-manager structures and over poor performance of passively managed portfolios has led to the development of factor investing based on smart beta and risk allocation. Even greater opportunities exist in individual money management, an industry which is about to experience an industrial revolution based on cost-efficient goal-based investment solutions.

In this context, the investment industry is currently experiencing a true industrial revolution that will eventually lead to scalable, cost-efficient, investor-centric, investment solutions. The design of meaningful investment solutions for individual investors is intimately related to the capacity to deliver proper risk management. The quintessence of the art and science of investment management is essentially about finding optimal ways to spend risk budgets that investors are reluctantly willing to set, with a focus on allowing the greatest possible access to performance potential while respecting such risk budgets. Risk hedging (required for securing investors’ essential goals), risk diversification (required for efficiently harvesting risk premia) and risk insurance (required for delivering upside performance needed to enhance the probability of achieving investors’ aspirational goals while securing their essential goals) are known to be three useful approaches to achieve optimal spending of investors’ limited risk and dollar budgets. While each of these sources of value added is already used to some extent in different contexts, a comprehensive integration of all these elements within a fully disciplined investment management framework is perhaps the most important challenge that our industry is currently facing.

Risk management is often mistaken for risk measurement. This is a problem since the ability to measure risk properly is at best a necessary but not sufficient condition to ensure proper risk management. Another misconception is that risk management is about risk reduction. In fact, it is at least as much about return enhancement as it is about risk reduction. Indeed, risk management is about maximising the probability of achieving investors’ long-term objectives while respecting the short-term constraints they face.

In the end, a failure to properly integrate the three forms of risk management in a holistic investment framework inevitably leads to under-spending investors’ risk budgets in normal market conditions (with a high opportunity cost), and over-spending their risk budgets in extreme market conditions. This idea was intuitively discussed in Bernstein (1996): “The word risk derives from the Latin risicare, which means to dare. In this sense, risk is a choice rather than a fate. The actions we dare to take, which depend on how free we are to make choices, are what the story of risk is all about.”
Academic Excellence and Industry Relevance
EDHEC-Risk Institute was set up to conduct world-class academic research and highlight its applications to the industry. In keeping with this mission, the Institute systematically seeks to validate the academic quality of its research through publications in leading scholarly journals, implements a multifaceted communications policy to inform investors and asset managers on state-of-the-art concepts and techniques, and develops business partnerships to launch innovative products.

High quality academic output with professional relevance
The results of the research work performed by the centre have been published by leading specialised scientific publications such as the Journal of Economic Literature, Journal of Financial Economics, Management Science, the Review of Financial Studies, the Journal of Portfolio Management, and the Financial Analysts Journal.

Recognition of the academic quality and professional relevance of the Institute's output is also evidenced by the integration of a number of articles into the required readings of professional designations, invitations to participate in curriculum design or authoring of programme material, and the decision by CFA Institute to designate EDHEC as an Approved Provider under the CFA Institute Professional Development (PD) Programme.

International academic journals in which EDHEC-Risk staff have published include:

- Applied Financial Economics
- Canadian Journal of Economics
- Economic Inquiry
- European Financial Management
- Finance and Stochastics
- Financial Analysts Journal
- Journal of Alternative Investments
- Journal of Asset Management
- Journal of Banking and Finance
- Journal of Business
- Journal of Business and Economic Statistics
- Journal of Business Finance and Accounting
- Journal of Econometrics
- Journal of Economic Dynamics & Control
- Journal of Economic Growth
- Journal of Economic Literature
- Journal of Empirical Finance
- Journal of Finance
- Journal of Financial and Quantitative Analysis
- Journal of Financial Economics
- Journal of Fixed Income
- Journal of Futures Markets
- Journal of International Money and Finance
- Journal of Investment Management
- Journal of Mathematical Economics
- Journal of Political Economy
- Journal of Portfolio Management
- Journal of Wealth Management
- Management Science
- Quarterly Journal of Economics
- Review of Finance
- Review of Financial Studies

Constant dialogue with the industry
To maximise exchanges between the academic and business worlds, EDHEC-Risk maintains a website devoted to asset and risk management research for the industry: www.edhec-risk.com, which has more than 70,000 regular visitors, circulates a quarterly newsletter to over 1.5 million practitioners, conducts regular industry surveys and consultations, and organises annual conferences for the benefit of institutional investors and asset managers.
Outstanding Faculty and Research Team

Close to 100 members strong, and representing 22 nationalities, the EDHEC-Risk Institute team is one of the largest risk and investment management research teams worldwide.

For its scientific arm, the team is made up of permanent professors and full-time researchers from EDHEC Business School, and also of affiliate professors and research associates.

Faculty members of EDHEC-Risk Institute include a core team of 13 full professors of finance at EDHEC Business School, some of whom have important responsibilities within the Institute.

Professor Noël Amenc is CEO of ERI Scientific Beta and Professor of Finance at EDHEC-Risk Institute. He has conducted active research in the fields of quantitative equity management, portfolio performance analysis, and active asset allocation, resulting in numerous academic and practitioner articles and books. He is on the editorial board of the Journal of Portfolio Management and serves as associate editor of the Journal of Alternative Investments and the Journal of Index Investing. He is a member of the Monetary Authority of Singapore Finance Research Council. He holds a master's in economics and a PhD in finance.

Professor Frank Fabozzi is Senior Scientific Adviser at EDHEC-Risk Institute and co-head of the fixed-income research programme. He was previously Professor in the Practice of Finance and Becton Fellow at the Yale School of Management. He has been the editor of the Journal of Portfolio Management since 1986.

Professor René Garcia is the Director of the EDHEC PhD in Finance programme. A specialist in asset-pricing theory, portfolio and risk management, and financial econometrics, he is a co-founder of the Journal of Financial Econometrics.

Professor Abraham Lioui is Deputy Academic Director of the EDHEC PhD in Finance programme. A specialist in portfolio and asset pricing theory, derivatives and risk management, Abraham was previously at the department of economics at Bar Ilan University where he held the Vice Chair position.

Professor Lionel Martellini is Director of EDHEC-Risk Institute. A specialist in asset allocation, derivatives, fixed-income modelling, and alternative investment, he was previously on the faculty of the University of Southern California and has held a visiting position at Princeton University. He sits on the editorial boards of various journals, including the Journal of Alternative Investments and the Journal of Portfolio Management.

Professor Raman Uppal is Senior Scientific Adviser at EDHEC-Risk Institute, with responsibility for regulation. A specialist in portfolio selection, asset pricing, risk management, and exchange rates, he was formerly Professor of Finance and Chair of the Finance Subject Area at the London Business School. He was previously editor for the Review of Financial Studies and is currently editorial board member of Mathematics and Financial Economics, associate editor of the Review of Asset Pricing Studies and the Critical Finance Review, and a director of the American Finance Association.
EDHEC-Risk Institute's team of 21 permanent researchers are an essential component of EDHEC-Risk Institute, conducting both academic and applied research.

The team of research engineers is closely involved in the Institute's research chairs and includes Head of Research, Dr Vincent Milhau. Vincent is in charge of a variety of research projects related to portfolio optimisation, asset-and-liability management, goal-based investing, and is also in charge of validating the quantitative models and algorithms developed at EDHEC-Risk Institute.

The applied research team is led by Dr Felix Goltz, Head of Applied Research. Felix oversees the Institute's applied research projects on portfolio construction and passive investing. As such, since 2012 he has been Research Director of ERI Scientific Beta, the entity created by EDHEC-Risk Institute to develop its activity in the area of indices and benchmarks.

The 30 research associates of EDHEC-Risk Institute provide direct links to the industry through their professional activities. Many of these research associates contribute to EDHEC-Risk Institute's position paper and working paper series and participate in seminars and conferences while playing leading roles within the industry.
Cooperation between EDHEC-Risk Institute and PRINCETON University

In 2012, EDHEC-Risk Institute signed a strategic partnership agreement with the Department of Operations Research and Financial Engineering at Princeton University for research and outreach initiatives in the area of risk and investment management.

One of the key ambitions of this partnership is to develop academic research that could have a potentially strong influence on the practice of investment management, at a time when the industry is facing a number of key paradigm changes leading to an increased focus on risk management. These developments also question a number of fundamental insights borrowed from asset pricing theory, including for example the risk-return relationship from the cross-sectional and time-series perspectives, and the joint research agenda will be at the forefront of outstanding problems in financial economics.

The success of the partnership on the research side relies on the exceptional strength of Princeton ORFE and EDHEC-Risk Institute faculty in mathematical finance and financial econometrics. Participating professors include Jianqing Fan, John Mulvey and Ronnie Sircar on the Princeton ORFE side, and Lionel Martellini, Frank Fabozzi, Raman Uppal and René Garcia on the EDHEC-Risk Institute side.

The common ambition of EDHEC-Risk Institute and Princeton ORFE is to jointly develop and manage a research programme related to risk and investment management, and more precisely with a focus on improving risk management techniques regarded as the true source of added-value in investment management.

The research draws heavily on tools borrowed from various fields of operations research and financial engineering, including in particular financial econometrics, mathematical finance and stochastic optimisation.

Princeton ORFE and EDHEC-Risk Institute faculties include some of the leading experts in these fields and their combined expertise is expected to lead to influential developments.

In addition to the members of both faculties, the research programme also involves doctoral candidates from Princeton ORFE. Selected candidates chosen to work on the joint research projects are invited to EDHEC-Risk campuses in Europe (Nice and London) or Asia (Singapore) for short-term or long-term visits dedicated to facilitating the coordination of the research efforts.

EDHEC-Risk and Princeton ORFE wish not only to develop cutting-edge research in financial econometrics and financial mathematics, but also to make sure that the investment industry will benefit from whatever useful academic insights will be generated through these research efforts.

In this context, EDHEC-Risk and Princeton ORFE jointly propose the EDHEC-Princeton Institutional Money Management conference, the first edition of which took place in New York City on April 27, 2012. The Princeton Club of New York also played host to the second and third editions of the conference on April 3, 2013 and April 23, 2015, respectively. On this occasion, speakers from EDHEC-Risk Institute, from Princeton ORFE, and also from the Bendheim Center for Finance at Princeton University, provide selected investment professionals with the latest academic insights related to new frontiers in institutional money management. The format of the conference is meant to facilitate exchanges of views between academicians and practitioners; it involves presentations given by a member of the faculty of Princeton University or EDHEC-Risk Institute, followed by a discussion with the audience.
Strong Partnerships with the Industry
EDHEC-Risk Institute is proud that its research activities are supported by some of the leading names in the global financial industry.

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<th>ABERDEEN</th>
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The financial industry is constantly evolving — new investment opportunities are constantly being uncovered and new products are constantly being introduced. Academic research can play a useful role in developing the analytical tools to help us better understand the risks and to make better investment decisions. Academic research can also help to provide important insights on the unique challenges faced by Sovereign Wealth Funds like the GIC and help to design solutions.”

Dr Tai Tee Chia, Chief Risk Officer and Director of Risk and Performance Management, GIC (Government of Singapore Investment Corporation), Member of EDHEC-Risk Institute’s International Advisory Board
Six Research Programmes

EDHEC-Risk’s six research programmes explore interrelated aspects of asset allocation and risk management to advance the frontiers of knowledge and foster industry innovation. These programmes correspond to a long-term investment on the part of the Institute. They are designed with the support of EDHEC-Risk Institute’s International Advisory Board. They host research chairs and strategic research projects that are supported by the industry.

Asset Allocation and Alternative Diversification
The research carried out focuses on the benefits, risks, and integration methods of the alternative classes in asset allocation and makes significant contributions to the field of multi-style/multi-class portfolio construction. In particular, EDHEC-Risk research has advanced non-parametric risk estimation methods and extended the Bayesian approach to portfolio construction in the presence of preferences about higher moments of return distributions. The programme includes the “Advanced Modelling for Alternative Investments” research chair, in partnership with Société Générale Prime Services (Newedge), the “Investment and Governance Characteristics of Infrastructure Debt Investments” research chair, in partnership with Natixis, and the “Infrastructure Equity Investment Management and Benchmarking” research chair, in partnership with Meridiam Infrastructure and Campbell Lutyens. This programme has also benefited as part of strategic research projects from the support of CME Group on “Exploring the Commodity Futures Risk Premium: Implications for Asset Allocation and Regulation”, of Aberdeen Property Investors on the EDHEC European Real Estate Investment and Risk Management Survey, and on “Financial Engineering and Global Alternative Portfolios for Institutional Investors” of Morgan Stanley Investment Management.

Performance and Risk Reporting
This programme aims to adapt the portfolio performance and style analysis models and methods to tactical allocation and to new forms of investments. Research looks at performance evaluation in traditional classes—investigating socially responsible investing or analysing rating methods for long-only funds—and at performance evaluation in the hedge fund universe (implementing dynamic factor models). The programme has led to a business partnership with SIX Telekurs and to the offering of the EuroPerformance-EDHEC style ratings, a service measuring the quality of active management in the European fund management industry. This programme also benefits from the contribution of new research launched in 2013 in the area of risk reporting as part of the new research chair, “New Frontiers in Risk Assessment and Performance Reporting”, supported by CACEIS.

Indices and Benchmarking
This programme involves three aspects of research into indices and benchmarks in traditional and alternative investment. The first aspect revisits modern portfolio theory to develop innovative approaches to constructing new forms of indices in the traditional and alternative universes. As such, EDHEC-Risk has proposed a proprietary method of style index construction for the alternative universe and launched the first composite hedge fund strategy indices in 2003. As part of its policy of transferring know-how to the industry, EDHEC-Risk Institute has set up ERI Scientific Beta. ERI Scientific Beta is an original initiative which aims to favour the adoption of the latest advances in smart beta design and implementation by the whole investment industry. Its academic origin provides the foundation for its strategy: offer, in the best economic conditions possible, the smart beta solutions that are most proven scientifically with full transparency of both the methods and the associated risks.

The second aspect of this research programme examines the use of index products in the core-satellite approach to investment management. This programme includes the “ETF and Passive Investment Strategies” research chair, in partnership with Amundi ETF & Indexing, and the “Active Allocation to Smart Factor Indices” research chair, in partnership with Rothschild & Cie. The final research dimension of this programme relates to the appreciation of the governance and transparency of indices. On the basis of its investigations, EDHEC-Risk Institute has contributed significantly to the recent consultations on benchmarks conducted by ESMA, IOSCO and the European Commission.
Six Research Programmes

ALM and Asset Allocation Solutions
This programme concentrates on the application of recent research in asset allocation for institutional, high net worth, and retail investors. The Institute is working on the idea that improving asset-management and strategic allocation techniques has a positive impact on the performance of ALM programmes. It devotes particular attention to the institutional context of ALM and to the impact of International Financial Reporting Standards and the Solvency II directive project on European pension funds and insurance companies. It also aims to extend the realm of ALM approaches to address the particular needs, constraints and objectives of sovereign wealth funds, the private banking clientele, and mass-affluent investors. In 2014, EDHEC-Risk Institute and Merrill Lynch Wealth Management launched an important research initiative on goal-based investing, which is, in EDHEC-Risk Institute’s view, a veritable revolution for wealth management. This initiative, “Risk Allocation and Goals-Based Wealth Management”, allows EDHEC-Risk Institute to be at the cutting edge of implementation of asset allocation techniques not only for institutional investors, but also for individual investors. The “ALM and Asset Allocation Solutions” programme includes the “Risk Allocation Solutions” research chair, in partnership with Lyxor Asset Management and has also benefitted from the support of AXA Investment Managers as part of the “Regulation and Institutional Investment” research chair, BNP Paribas Investment Partners as part of the “Asset Liability Management and Institutional Investment Management” research chair, Deutsche Bank as part of the “Asset-Liability Management Techniques for Sovereign Wealth Fund Management” research chair, and Ontario Teachers’ Pension Plan as part of the “Advanced Investment Solutions for Liability Hedging for Inflation Risk” research chair.

Asset Allocation and Derivative Instruments
This research programme focuses on the use of derivative instruments for portfolio management and on dynamic asset allocation methods in asset management and asset-liability management. Key themes include the optimal design of structured products, the role of structured products and derivatives in asset allocation, “passive” replication of “active” hedge fund indices through portfolios of derivatives, and structured products and derivatives on underlying instruments that are illiquid or lack liquidity. This programme benefitted from the support of the French Banking Federation as part of the “Structured Products and Derivatives Instruments” research chair, and includes the research projects on “The Benefits of Volatility Derivatives in Equity Portfolio Management”, in partnership with Eurex, and “The Benefits of Dynamic Asset Allocation Through Buy-and-Hold Investment in Derivatives”, in partnership with Société Générale Corporate & Investment Banking.

Non-Financial Risks, Regulation and Innovations
The financial crisis has been synonymous with a transfer of a portion of investor risk towards the providers of investment and related services. The difficulties that third-party fund management has experienced in the areas of asset security, pricing and compliance with regulation, suggest that this shift in the responsibilities of those involved in fund management will have a significant impact on the profit and loss accounts not only of the fund management firms but also of all the service providers who are associated with them. Against this backdrop, this research programme aims to identify the non-financial risks parties within the fund management industry bear as a result of their practices and of regulations, assess the importance of these risks and their impact on the parties’ solvency and business models, and propose means of mitigating these risks. The programme benefitted from the support of CACEIS as part of the “Risk and Regulation in the European Fund Management Industry” research chair. In 2012, this research led EDHEC-Risk Institute to make important proposals for the development of mutual fund regulation in Europe, notably with the idea of restricted UCITS enabling investors to be able to identify UCITS that present very limited non-financial risk. As part of the renewal of its support to the French research teams, the French Banking Federation decided in 2013 to support the “Innovations and Regulations in Investment Banking” research chair proposed by EDHEC-Risk Institute, the issues of which are part of this research programme.
EDHEC-Risk Research Chairs and Strategic & Private Research Projects

**Research Chairs**

Research chairs involve close partnerships with their financial sponsors and a commitment from EDHEC-Risk to publishing related articles in international academic journals as well as to releasing the research results to the investment management profession through wide distribution of practitioner-oriented publications and presentations at industry conferences.

**ETF and Passive Investment Strategies**  
*In partnership with Amundi ETF & Indexing*  
The chair analyses the developments in the use of exchange-traded funds as part of the asset allocation process and looks at advanced forms of risk budgeting within the framework of a core-satellite approach. It also conducts research on the role of ‘smart beta’ in the organisation of the investment process.

**Optimising Bond Portfolios**  
*In partnership with BDF Gestion*  
The chair looks at the question of forming bond portfolios with optimal risk/reward by optimising in the absence of credit risk or within a homogenous credit risk category, in the presence of heterogeneous credit risk, and with a fixed horizon.

**New Frontiers in Risk Assessment and Performance Reporting**  
*In partnership with CACEIS*  
This chair looks at improved risk reporting, integrating the shift from asset allocation to factor allocation, improved geographic segmentation for equity investing, and improved risk measurement for diversified equity portfolios.

**Innovations and Regulations in Investment Banking**  
*Sponsored by the French Banking Federation (FBF)*  
This chair is providing advanced research in four areas: skewness as an asset class; corporate and sovereign credit default swap (CDS) markets; the evaluation of policies to regulate financial markets; and options on liquidity.

**Risk Allocation Solutions**  
*In partnership with Lyxor Asset Management*  
This chair is examining performance portfolios with improved hedging benefits, hedging portfolios with improved performance benefits, and inflation risk and asset allocation solutions.

**Risk Allocation Framework for Goal-Driven Investing Strategies**  
*In partnership with Merrill Lynch Wealth Management*  
The purpose of this chair is to develop new research on risk allocation and goals-based investing. The initiative involves the pursuit of fundamental research on risk allocation and goals-based wealth management. The aim of the research project is to deliver a mathematically rigorous approach to investing for goals such as capital preservation, retirement income, maintenance of minimum wealth levels and preferences regarding risk and liquidity.

**Infrastructure Equity Investment Management and Benchmarking**  
*In partnership with Meridiam Infrastructure and Campbell Lutyens*  
The purpose of this chair is to provide a better understanding of the nature and investment profile of equity investment in infrastructure assets. It will focus on fostering data collection and aggregation from investors and on improving the benchmarking of return distributions for direct and indirect investment in infrastructure equity by developing an academically-validated and industry-recognised index.

**Investment and Governance Characteristics of Infrastructure Debt Investments**  
*In partnership with Natixis*  
The aim of this chair is to contribute to clarifying the nature and investment profile of infrastructure debt instruments in order to reduce the relative shortfall of publicly available investment data on the subject, compared to longer established investment segments. The chair specifically focuses on the risk and return characteristics and portfolio diversification benefits that infrastructure debt instruments can bring to institutional investors.
EDHEC-Risk Research Chairs and Strategic & Private Research Projects

Advanced Modelling for Alternative Investments
*In partnership with Société Générale Prime Services (Newedge)*

The purpose of the chair is to expand the frontiers in alternative investment modelling techniques by enhancing the understanding of the dynamic and non-linear relationship between alternative investment returns and the returns on underlying fundamental systematic factors, and analysing the implications for managing portfolios that include alternative investments.

Active Allocation to Smart Factor Indices
*In partnership with Rothschild & Cie*

The purpose of this research chair is to examine the benefits of smart beta allocation. The goal is to provide a quantitative assessment of the benefits expected from sources of added value in the design of equity portfolios with superior risk and return characteristics.

Private Research Projects

In addition to making important public contributions to the advancement of academic research and the improvement of industry practices, EDHEC-Risk Institute also employs its expertise to conduct proprietary research projects for selected partners with a focus on the design of meaningful welfare-improving forms of investment solutions and assist them in the development of innovative products, thus providing them with an edge over the competition.

Within the framework of its relations with the industry, EDHEC-Risk Institute aims to support a limited number of asset owners and asset managers in the design and in the implementation of welfare-improving investment solutions for both institutional and individual investors, with a particularly strong focus on retirement investing solutions.

With the need to supplement retirement savings via voluntary contributions, individuals will increasingly be responsible for their own retirement investment decisions. This global trend already poses substantial challenges to millions of baby-boomers who typically lack the expertise needed to make such educated investment decisions. These concerns have led to a renewed interest in retirement investment products inclusive or exclusive of protection against longevity risk. Unfortunately, these products, which are respectively known as variable annuities and target date funds, often fall short in their current form of implementation of providing satisfactory solutions to the problems faced by individuals when approaching investment decisions in a retirement context.

In this context, EDHEC-Risk is working with Merrill Lynch Wealth Management (MLWM). The focus of the project is to design and calibrate a range of standardised goal-based investment solutions, with a focus on retirement solutions, which can be used by MLWM to address the needs of individual investors. The aim is to propose a limited number of retirement solutions that could accommodate the needs of a variety of investors; it will lead to a full solution design exercise, with a focus on scalable standardised goal-based investing solutions, as well as a series of backtests and associated reporting outcomes.

EDHEC-Risk is also partnering with California Public Employees’ Retirement System (CalPERS), in cooperation with Professor John Mulvey from Princeton University, to help them build an integrated factor-based asset allocation and asset-liability management process. The Institute will explore, analyse and make recommendations related to the potential benefits expected from risk factor-based asset allocation, including the assessment of a translation mechanism between risk factor-based and asset class-based allocation.
Seven areas of major strategic research projects conducted with the industry:

Exploring the Commodity Futures Risk Premium: Implications for Asset Allocation and Regulation
*In partnership with CME Group*

Assessing the Quality of Stock Market Indices: Requirements for Asset Allocation and Performance Measurement
*In partnership with UBS Global Asset Management and BNP Paribas Asset Management*

Financial Engineering and Global Alternative Portfolios for Institutional Investors

Alternative Investments for Institutional Investors: Risk Budgeting Techniques in Asset Management and Asset-Liability Management
*In partnership with Morgan Stanley Investment Management*

MiFID and Best Execution Transaction Cost Analysis A-Z: A Step towards Best Execution in the Post-MiFID Landscape
*In partnership with NYSE Euronext, SunGard and CACEIS*

EDHEC European Real Estate Investment and Risk Management Survey
*In partnership with Aberdeen Property Investors*

Structured Forms of Investment Strategies in Institutional Investors’ Portfolios

Benefits of Dynamic Asset Allocation Through Buy-and-Hold Investment in Derivatives

Structured Equity Investment Strategies for Long-Term Asian Investors
*In partnership with Société Générale Corporate & Investment Banking*

Using Index Options to Improve the Performance of Dynamic Asset Allocation Strategies

The Benefits of Volatility Derivatives in Equity Portfolio Management
*In partnership with Eurex*

EDHEC-Risk research chairs involve a close partnership with a sponsor and a commitment from EDHEC-Risk over three years leading to international academic publications and position papers aimed at professionals, institutional investors and regulators. In addition to these research chairs, EDHEC-Risk also has close partnerships with major industry leaders on strategic research projects.
EDHEC-Risk Position Papers, Publications and Industry Surveys

Position papers – the EDHEC-Risk stance on issues of relevance to the financial industry
EDHEC-Risk has innovated with the concept of the EDHEC-Risk Position Paper. This is a collective commitment not only on the part of the research team but also the whole institution to research results that are brought to the attention of companies and society at large.

As such, EDHEC-Risk has taken a position on, amongst many other issues, the risks of Exchange-Traded Funds (ETFs); the inadvisability of a financial transaction (or “Tobin”) tax, the ground to be covered for optimal implementation of the Solvency II directive, the solvency requirements for banks and the nature of asset management regulations following the credit crisis, the “fair value” accounting standards, the undesirable effects of banning short sales, the absence of excessive speculation on the US oil futures markets, the performance of socially responsible investing, the regulatory proposals for commodity derivatives markets in Europe, the European Commission White Paper "An Agenda for Adequate, Safe and Sustainable Pensions", better consideration of pension liabilities in European Union countries, and the link between Eurozone sovereign debt and credit default swap (CDS) prices.

EDHEC-Risk publications – financial research that corresponds to the needs of the corporate world
EDHEC-Risk’s publication strategy is to break away from a purely academic vision of research, whereby any research carried out has only been evaluated by academics and disseminated primarily to other scholars, to favour an approach where business is at the heart of the researcher’s concerns.

To ensure that our financial research corresponds to the needs of the corporate world, we present our publications in such a way as to render the research conclusions as accessible as possible to finance professionals, by including clearly delineated introductions, conclusions and an executive summary.

Recent EDHEC-Risk publications include a comprehensive risk allocation framework for goals-based wealth management, the perceptions of investment professionals on alternative equity beta strategies, geographic exposure for the performance reporting of equity portfolios, performance measurement for unlisted infrastructure debt, and the valuation of privately-held infrastructure equity investment.

Industry surveys – confronting research advances with industry best practices
EDHEC-Risk regularly conducts surveys on the state of the international institutional investment and asset management industry. These surveys look specifically at the application of recent research advances within investment management companies and at best practices in the industry.

The surveys cover both the traditional investment universe and alternative investments. Survey results receive considerable attention from professionals and are extensively reported by the international financial media.

Recent industry surveys conducted by EDHEC-Risk
• The EDHEC-Risk European ETF Survey 2014 sponsored by Amundi ETF & Indexing
EDHEC-Risk Conferences
The EDHEC Risk Days are a great way to meet top professionals from a wide area of expertise and to take part in hands-on workshops on very interesting research topics presented by excellent EDHEC staff. What I find most appealing is the practicality of the research, in other words – you can really use the outcomes and models in your everyday profession. Visiting the EDHEC Risk Days helps me to stay on top of my field.”

Michael Kaal, Director Finance & Risk, Pensioenfondsen Unilever Nederland
EDHEC-Risk Conferences

Since 2004, EDHEC-Risk Institute has been organising annual conferences devoted to the buy-side industry across Europe. By setting up the EDHEC Hedge Fund Days in May 2004, EDHEC-Risk created a new type of conference that aimed to provide professionals with the state of the art in financial research in the various fields of risk and asset management. In view of our academic background, this was not about organising sales conferences where the speakers in turn deliver excessively brief messages that they do not have the time to discuss thoroughly, but about genuinely transmitting expertise on and debating current themes proposed by the EDHEC-Risk research team.

As such, the EDHEC-Risk conferences allow research results to be compared with the practices and needs of institutional investment and asset management professionals. EDHEC-Risk's independence, the original approach—which leaves time for instruction and discussion during the sessions—and the highly selective speaker panel, make the EDHEC-Risk conferences the must-attend annual events for institutional investors and asset managers who are concerned about maintaining best level practices in both technical and conceptual terms.

The EDHEC-Risk Alternative Investment Days were recognised as the most relevant and worthwhile industry conference dedicated to alternative investments. The inaugural event, then called EDHEC Hedge Fund Day, was attended by over 400 senior professionals ranging from private and institutional investors to both hedge fund and fund of hedge fund managers from 20 countries. The fourth edition, which was held at the ExCeL Centre in Canary Wharf on 9-10 December 2008, was attended by over 1,200 delegates in the midst of the financial crisis, confirming that this event has become the most prestigious and well-attended academic and professional conference on alternative investments in Europe.

The first EDHEC-Risk Institutional Days ran in Paris in November 2006. The 2008 and 2009 events attracted more than 2,100 institutional investors, asset managers and private bankers.

In 2010, EDHEC-Risk's partnership with IPE enabled the EDHEC-Risk Institutional Days to be held on the two days following the IPE Pension Fund Awards in Monaco. In 2012, in order to better satisfy the requirements of institutional investors, EDHEC-Risk Institute merged its two annual conferences into a unique three-day event in Europe, the EDHEC-Risk Days Europe, held at The Brewery in London on 27-29 March 2012. The year 2012 also saw the inaugural EDHEC-Risk Days Asia conference in Singapore at the Marina Bay Sands Conference Centre on 9-10 May 2012.


The EDHEC-Risk Days 2015 took place at The Brewery in London on 24-25 March 2015. This global conference is now a single, unique event.

The EDHEC-Risk Days 2016 will take place at The Brewery in London on 15-16 March 2016. The conference includes three major events that will allow professionals to review major industry challenges, explore state-of-the-art investment techniques and benchmark practices to research advances.
EDHEC-Risk, JOIM and Oxford University have joined forces for the first time to feature the best of the current state of the art, which has immediate as well as future impact on the practice of Retirement Investing. The JOIM-Oxford-EDHEC Retirement Investing Conference takes place on 11, 12 and 13 September 2016 on the Oxford University Campus and showcases the highest quality thinking and research in the area. The programme is developed on a foundation of academic rigour with an overriding objective of identifying practical significance. Leading experts from the US and Europe will be featured. This includes the Nobel Prize recipient, Robert Merton, Deborah Lucas from the MIT Sloan School of Management, Magnus Dahlquist (Stockholm School of Economics), Elroy Dimson (London Business School), Mark Kritzman (Windham Capital), Martin Leibowitz (Morgan Stanley Research), Tim Jenkinson (University of Oxford) and Lionel Martellini (EDHEC-Risk Institute).

"The JOIM is extremely pleased to collaborate with Oxford and EDHEC-Risk Institute to showcase the best from academia and the practice on Retirement Investing. This is an opportunity to not only learn but interact with leading participants in this important area."

Gifford Fong, Editor, Journal Of Investment Management (JOIM)
EDHEC-Risk Institute's Research Dissemination Policy
EDHEC-Risk has a well-deserved reputation for providing key insight into risk-related aspects of the fund industry. We have given extensive support to EDHEC-Risk’s research projects as we find the combination of high quality academic research and our extensive operational knowledge and wide-ranging industry expertise, provides practicable solutions to industry issues. We are then able to use the results to refine the services we provide, ensuring our clients remain at the cutting edge in terms of controlling risk.”

François Marion, Chief Executive Officer, CACEIS
EDHEC-Risk Institute's Research Dissemination Policy

Publishing articles in academic journals is a starting point for EDHEC-Risk Institute that qualifies the academic value of the research, but the ultimate objective for EDHEC-Risk Institute is to be able to change the practices of the industry and ensure that our research results are known and accessible for professionals.

EDHEC-Risk Institute has been cited over 55,000 times in worldwide trade publications. Highlights of the Institute’s involvement with the press include:

• Regular articles covering the Institute’s work in Financial Times fund management;
• Partnership with CNBC and the Wall Street Journal Europe on the Asia Investment Forum;
• Partnership with Investment & Pensions Europe (IPE) on the IPE Pension Fund Awards, and the EDHEC-Risk Institutional Days.

EDHEC-Risk Institute Institutional Money Management Supplement in association with Pensions & Investments (P&I)

This quarterly supplement with the leading publication for North American asset owners was first published in Fall 2013 and continues to provide cutting-edge research-based insights for institutional investors.

A special microsite dedicated to EDHEC-Risk Institute’s research can be accessed on the Pensions & Investments website: www.pionline.com/EDHEC_Risk

A non-exhaustive list of professional publications in which the work of the EDHEC-Risk Institute has been quoted can be found below:

> Absolute Return
> Asia Asset Management
> Asian Investor
> Australian Financial Review
> Commodities Now
> Deutsche Pensions & Investment Nachrichten
> Die Welt
> European Pensions News
> Financial News
> Financial Times
> Financial Times China
> Funds Europe
> Futures Magazine
> Global Alternatives
> Global Investor
> Global Pensions
> Hedge Funds Review
> Hedge Pensions Review
> Hedgeweek
> Hong Kong Economic Journal
> InvestHedge
> Investment & Pensions Asia
> Investment & Pensions Europe
> Investment Adviser
> Investment Magazine (Australia)
> L’Agefi
> L’Agefi Suisse
> Le Temps
> Les Echos
> Life & Pensions
> Milano Finanza
> Operational Risk
> Pensions Management
> Pensions Week
> Portfolio International
> Professional Pensions
> Risk
> The Economist
> The Hedge Fund Journal
> Wall Street Journal
> Wall Street Journal Europe
EDHEC-Risk Institute's Research Dissemination Policy

EDHEC-Risk Institute Research Insights Supplement in association with Investment & Pensions Europe (IPE)

Since the inaugural issue in Winter 2010, EDHEC-Risk Institute has been producing a Research Insights supplement that is distributed to European institutional investment professionals with the leading publication Investment & Pensions Europe (IPE). The aim of the supplement is to provide information on research-based solutions to the key challenges facing institutional investors and to make a genuine contribution to improving institutional investment practices.

In 2013, EDHEC-Risk Institute also entered into a partnership with AsianInvestor to provide a regular supplement for Asian investors.
The EDHEC-Risk web site is based on a simple idea but one which provides a structure for all of EDHEC-Risk’s financial research activities: “How to enable professionals to get the most out of practically relevant academic research in the field of investment management?” As a consequence, the EDHEC-Risk website, building upon the joint academic and professional expertise of the team, is endeavouring to be the most useful site for practitioners who are keen to take advantage of research results to improve their investment and risk management processes.

Faced with increasing amounts of information, announcements that are made for publicity purposes and false innovations in the asset management industry, the academic background of the EDHEC-Risk editorial team allows users to take a step back from the facts and to select and summarise the required information.

**Newsletter**

The electronic newsletter containing news from all the main sections of the EDHEC-Risk website (editorial, feature, interview, research news, EDHEC-Risk publications, etc.) is sent out to over 1.5 million readers worldwide.

**Site Layout**

edhec-risk.com is structured around three types of sections:
- **News sections**;
- **Sections linked to the centre’s research chairs and research programmes**;
- **Sections relating to research that is of relevance to the asset management industry**.

**Industry Analysis**

edhec-risk.com provides a reasoned analysis of asset management industry news. Topics are chosen according to two criteria: firstly, the extent of the number of references made in the international specialised press; secondly, the pertinence of the information in relation to the EDHEC-Risk research programme themes.

**Features**

This section presents topics of particular interest to the asset management industry.

**Interviews**

Researchers or practitioners from the asset management industry are interviewed regularly by the edhec-risk.com team.

**Events**

edhec-risk.com provides access to events organised by EDHEC-Risk, as well as asset management industry events involving EDHEC-Risk’s participation.

You can follow us on Twitter and LinkedIn to stay informed about our latest research news, press coverage, events and more.
Truly outstanding faculty...a melding of relevant academic studies by actual practitioners. Highly useful material to what is unfolding in today’s investing world.”

James Egan, Senior Vice President and Director of Fixed Income Department, Janney Capital Management LLC – USA
The executive education seminars offered by EDHEC-Risk Institute help professionals to upgrade their skills with advanced asset allocation and risk management training across traditional and alternative classes.

Building on the latest research advances engineered by EDHEC-Risk Institute, we offer a range of executive courses in investment management and joint seminars with CFA Institute.

State-of-the-art investment management series

The EDHEC-Risk Institute investment management series seminars bring research advances and state-of-the-art practices into the practitioner’s portfolio of skills.

Designed and delivered by some of the most respected practitioners and academics in the area, these executive courses provide participants with a workable knowledge of the techniques that any investment professional should adopt. Presented in a highly accessible manner and drawing upon the latest research results, these executive courses appeal to senior officers, investment specialists and administrators working for buy- and sell-side institutions, and to consultants and key account representatives advising high net worth individuals and institutional investors.

Spanning traditional and alternative investments, our offering includes such courses as:
- Advanced Commodity Investment Seminar
- Advances in Equity Portfolio Construction Seminar
- Alternative Investments Seminar
- Investment Risk Management Seminar
- Advanced Hedge Fund Investing Seminar
- Asset Allocation and Risk Management Seminar

Courses are offered in London and New York and carry CFA Institute Continuing Education credits.

CFA Institute – EDHEC-Risk Institute joint seminars

CFA Institute and EDHEC-Risk Institute organise events which present the latest research advances in asset allocation and alternative investment and clarify the distinction between true innovation and mere marketing claims in emerging industry trends. These exclusive seminars offer senior investment professionals a unique opportunity to gain an in-depth appreciation of the concepts and techniques that are shaping the future of investment management. In addition, they provide practical tools and novel investment approaches to improve investment and risk management processes and design new products.

The partnership between EDHEC-Risk Institute and CFA Institute provides the CFA Institute community with privileged access to EDHEC-Risk Institute’s expertise and allows EDHEC Business School to be part of the select club of global institutions—such as Harvard Business School and Wharton—which offer joint executive programmes with the world’s leading association of investment professionals.

CFA Institute/EDHEC-Risk Institute Seminars:
- Advances in Equity Portfolio Construction Seminar – London, New York
Cooperation between EDHEC-Risk Institute and Yale School of Management

EDHEC-Risk Institute and the Yale School of Management offer executive education courses based on the exceptional strength and relevance of academic research conducted by both Yale SOM and EDHEC-Risk finance faculty. In 2013, we began a series of executive education seminars around the unifying theme, “Advanced Risk and Investment Management” in the US and Europe.

The focus of these seminars is on utilising the latest academic insights to help investment professionals better understand and implement advanced investment approaches and methodologies. The seminars provide relevant academic insights with respect to some of the most important dimensions of the investment process, including:

- Yale-EDHEC-Risk Asset Allocation and Investment Solutions Seminar
- Yale-EDHEC-Risk Harvesting Risk Premia in Equity and Bond Markets Seminar
- Yale-EDHEC-Risk Harvesting Risk Premia in Alternative Asset Classes and Investment Strategies Seminar
- Yale-EDHEC-Risk Multi-Asset Multi-Manager Products and Solutions Seminar

Participants in these seminars can acquire the joint Yale School of Management – EDHEC-Risk Certificate in Risk and Investment Management.

“Very interesting seminar, both academic and practical points of view are balanced and well presented.”

Sofiane Tafat, Portfolio manager, Desjardins Asset Management – Canada

“I like the combination of updates from Academia combined with real life experience.”

Henrik Thomsen, Vice President, Investment Services, KIRKBI A/S – Denmark
Participants in the executive education programmes offered by EDHEC-Risk Institute represent the leading names in investment banking, traditional and alternative asset management, private banking and wealth management, advisory services and technology as well as the financial industry's foremost end-investors such as pension funds and foundations, sovereign funds, insurance companies, and family offices.

ABERDEEN ASSET MANAGEMENT
ABU DHABI INVESTMENT AUTHORITY
AEGON ASSET MANAGEMENT
ALBERTA INVESTMENT MANAGEMENT CORPORATION
ALLIANCE BERNSTEIN
ALLIANZ GLOBAL INVESTORS
AMF PENSION
AMUNDI
AUSTRALIAN PRUDENTIAL REGULATION AUTHORITY
AUSTRALIAN SUPER
ALLIANZ
AP2
APG INVESTMENTS
ASPECT CAPITAL
ATP
AVIVA INVESTORS
AXA
BAE SYSTEMS PENSION FUND
BANK OF CANADA
BARCLAYS
BLACKROCK
BNP PARIBAS
BRUNEI INVESTMENT AGENCY
CALPERS
CALSTRS
CANADA PENSION PLAN INVESTMENT BOARD
CAPITAL GROUP
CITIGROUP
CREDIT SUISSE
DEUTSCHE BANK
EDF
EUROPEAN CENTRAL BANK
FIDELITY
FINANCIAL SERVICES AUTHORITY
FRANKLIN TEMPLETON INVESTMENTS
GIC
GOLDMAN SACHS
HARVARD MANAGEMENT COMPANY
HSBC
INVEESCO
IRISH NATIONAL PENSION RESERVE FUND
JP MORGAN
KPMG
LEGAL & GENERAL INVESTMENT MANAGEMENT
LEGG MASON
MAINEPERS
MERRILL LYNCH
MONETARY AUTHORITY OF SINGAPORE
MORGAN STANLEY
NATIONAL BANK OF KUWAIT
NATIXIS
NESTLE PENSION FUND
NEW ZEALAND SUPERANNUATION FUND
NORGES BANK INVESTMENT MANAGEMENT

Addresses the right questions with brilliant academic precision."
Kjetil Houg, CIO and CFO, Oslo Pensjonsforsikring

“This was an excellent overview of portfolio theory and recent developments on practical implementation of theory. Very useful.”
Gary Smith, Chief Economist, Alberta Investment Management Corporation
This seminar was on the leading edge of asset allocation and risk management and provided a balanced presentation of academic theory and practical/implementable solutions.”

Andrew Sawyer, Chief Investment Officer, MainePERS, USA

“The best training course that I have attended in my professional career. Fast paced, cutting edge and practical.”

David Rae, Head of Investment Analysis, New Zealand Superannuation Fund, New Zealand

For further information about EDHEC-Risk Institute executive education seminars, please log on to http://www.edhec-risk.com or contact Ms Caroline Prévost at EXCEducation@edhec-risk.com or on +33 493 183 496
ERI Scientific Beta

"More for Less": A Different Actor in the Indexing Industry

As part of its policy of transferring know-how to the industry, EDHEC-Risk Institute has set up ERI Scientific Beta. ERI Scientific Beta is an original initiative which aims to favour the adoption of the latest advances in smart beta design and implementation by the whole investment industry. Its academic origin provides the foundation for its strategy: offer, in the best economic conditions possible, the smart beta solutions that are most proven scientifically with full transparency of both the methods and the associated risks.

ERI Scientific Beta aims to be the first provider of a smart beta platform to help investors understand and invest in advanced beta equity strategies. It has three principles:

• **Choice**: A multitude of strategies are available that allow users to build their own benchmark, choosing the risks to which they wish, or do not wish, to be exposed. This approach, which makes investors responsible for their own risk choices, referred to as Smart Beta 2.0, is the core component of the index offerings proposed by ERI Scientific Beta.

• **Transparency**: The rules for all of the Scientific Beta series are replicable and transparent. The track records of the Scientific Beta indices can be checked and justified through unrestricted access to historical compositions.

• **Clarity**: Exhaustive explanations of construction methodologies are provided, as well as detailed performance and risk analytics.

Established by EDHEC-Risk Institute, one of the very top academic institutions in the field of fundamental and applied research for the investment industry, ERI Scientific Beta shares the same concern for scientific rigour and veracity, which it applies to all the services that it offers investors and asset managers.

Part of EDHEC Business School, a not-for-profit organisation, EDHEC-Risk Institute has sought to provide the ERI Scientific Beta services in the best possible economic conditions.

The ERI Scientific Beta offering covers three major services:

• **Scientific Beta Indices** Scientific Beta Indices are smart beta indices that aim to be the reference for the investment and analysis of alternative beta strategies. Scientific Beta Indices reflect the state of the art in the construction of different alternative beta strategies and allow for a flexible choice among a wide range of options at each stage of their construction process. This choice enables users of the platform to construct their own benchmark, thus controlling the risks of investing in this new type of beta (Smart Beta 2.0). The Scientific Beta platform currently offers 3,076 smart beta indices.

Within the framework of Smart Beta 2.0 offerings, ERI Scientific Beta provides access to smart factor indices, which give exposure to risk factors that are well rewarded over the long term, while at the same time diversifying away unrewarded specific risks. By combining these smart factor indices, one can design very high-performance passive investment solutions.

• **Scientific Beta Analytics** Scientific Beta Analytics are detailed analytics and exhaustive information on its smart beta indices to allow investors to evaluate the advanced beta strategies in terms of risk and performance. The analytics
ERI Scientific Beta
A “More for Less” Initiative for Smart Beta Investing

capabilities include risk and performance assessments, factor and sector attribution, and relative risk assessment. Scientific Beta Analytics also allow the liquidity, turnover and diversification quality of the indices offered to be analysed. In the same way, analytics provide an evaluation of the probability of out-of-sample outperformance of the various strategies present on the platform. We believe that it is important for investors to be able to conduct their own analyses, select their preferred time period and choose among a wide range of analytics in order to produce their own picture of strategy performance and risk.

- **Scientific Beta Fully-Customised Benchmarks and EDHEC-Risk Smart Beta Solutions**
  Scientific Beta Fully-Customised Benchmarks is a service proposed by ERI Scientific Beta, and its partners, in the context of an advisory relationship for the construction and implementation of benchmarks specially designed to meet the specific objectives and constraints of investors and asset managers. This service notably offers the possibility of determining specific combinations of factors, considering optimal combinations of smart beta strategies, defining a stock universe specific to the investor, and taking account of specific risk constraints during the benchmark construction process.

In 2015, ERI Scientific Beta established an offering based on EDHEC-Risk Institute’s applied research expertise in the field of risk management. This offering, referred to as “EDHEC-Risk Smart Beta Solutions”, enables tailored solutions for multi-smart beta allocation to be defined for institutional investors and asset managers, allowing specific objectives with regard to relative or absolute risks in an asset management-only or an asset-liability management dimension to be taken into account.

With a concern to provide worldwide client servicing, ERI Scientific Beta is present in Boston, London, Nice, Paris, Singapore and Tokyo.

ERI Scientific Beta has a dedicated team of 45 people who cover not only client support from Nice, Singapore and Boston, but also the development, production and promotion of its index offering.
International Advisory Board
What makes EDHEC-Risk unique is its determined effort to keep on the cutting edge of research that is of operational relevance to investors, particularly those with heavy involvement in alternatives. The quality of the dialogue at the EDHEC-Risk Advisory Board provides very useful insights into what is a rapidly changing industry and a unique opportunity to take stock of commonly accepted practices. The debate on how to implement technically superior approaches to old problems will continue for many years to come, and it is critical to have thought-leaders like EDHEC-Risk help investors and the industry re-evaluate the frameworks in which we operate.

Gumersindo Oliveros, CEO & CIO, KAUST Investment Management Company
Upholding High Standards of Corporate Governance

EDHEC-Risk Institute has adopted a strict corporate governance structure and rigorous processes which guarantee both the scientific quality and the operational relevance of its activities. The centre’s management and its international advisory board enforce strict validation and evaluation processes to ensure that all efforts remain focused on issues which are central to the development of the profession.

External validation and evaluation by international experts
In line with best practices of corporate governance, EDHEC-Risk Institute has set up an advisory board which brings together distinguished scholars, representatives of regulatory bodies as well as senior executives from business partners and other leading institutions. These international experts advise on the relevance and goals of the research programme proposals presented by the Institute’s management and evaluate research outcomes with respect to their potential impact on industry practices. The board also advises on the objectives and contents of projects deriving from the expertise of the Institute, thereby ensuring that graduate and executive programmes remain at the forefront of developments in the marketplace.

Tomas Franzén, Chairman of EDHEC-Risk Institute’s International Advisory Board, and CIO, Andra AP-fonden (AP2)

Rigorous validation and evaluation processes throughout the life-cycle of research programmes

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Members of EDHEC-Risk Institute's International Advisory Board as of 15 February 2016

Chairman: Mr Tomas Franzén, Chief Investment Strategist, AP2 – Andra AP-fonden.

- Mr Christopher Ailman, Chief Investment Officer, CalSTRS.
- Mr Patrick Armstrong, Senior Officer, Financial Innovation, European Securities and Markets Authority (ESMA).
- Mr Jacques Beyssade, Chief Risk Officer, BPCE Group.
- Mr Stefan Bichsel, Executive Board Member and Head of the Asset Management & Trading Division, BCV, and former Chairman, EFAMA.
- Ms Anne-Christine Champion, Global Head of Infrastructure & Projects, Natixis.
- Mr Tai Tee Chia, Chief Risk Officer, Government of Singapore Investment Corporation.
- Mr James C. Davis, Chief Investment Officer, OPSEU Pension Trust.
- Mr Philippe Desfossés, Chief Executive Officer, ERAFP.
- Mr Mark Fawcett, Chief Investment Officer, NEST Corporation.
- Mr Patrick Fenal, Deputy Chairman, Unigestion.
- Mr Henrik Gade Jepsen, Chief Investment Officer, ATP.
- Mr Nicolas Gauselle, Chief Investment Officer, Lyxor Asset Management.
- Mr Brad Holzberger, Chief Investment Officer, QSuper.
- Mr Atsushi Ikari, Director General, Investment Strategy Department, Government Pension Investment Fund (GPIF), Japan.
- Mr David Iverson, Head of Asset Allocation, Guardians of New Zealand Superannuation.
- Mr Joseph John Jelincic, Member of the Board of Administration and Chair of the Risk & Audit Committee, CalPERS.
- Mr Fathi Jerfel, Chief Executive Officer, Amundi Investment Solutions.
- Mr Theo Jeurissen, Senior Adviser, Goldman Sachs Asset Management (GSAM).
- Mr Masamichi Kono, Vice Commissioner for International Affairs, Financial Services Agency, Japan.
- Mr Gérard de Lambilly, Secretary General, Newedge.
- Mr Jean-Louis Laurens, Managing Partner and CEO, Rothschild & Cie Gestion.
- Ms Jacqueline Loh, Deputy Managing Director, Monetary Authority of Singapore (MAS).
- Mr Thomas Laux, Chief Risk Officer, Eurex Clearing AG.
- Mr Xavier Lépine, Chairman, La Française AM.
- Mr François-Serge Lhabitant, Associate Professor, EDHEC Business School, Chief Investment Officer, Kedge Capital.
- Mr Philippe Marchessaux, Head of BNP Paribas Investment Partners and CEO of BNP Paribas Asset Management.
- Mr François Marion, Chief Executive Officer, CACEIS.
- Mr Lionel Martellini, Director, EDHEC-Risk Institute, Senior Scientific Advisor, ERI Scientific Beta.
- Mr Joseph Masri, Head of Risk Management, Qatar Investment Authority.
- Mr Gumersindo Oliveros, Chief Executive Officer, KAUST Investment Management Company.
- Mr Bruno de Pampelonne, President, Tikehau Investment Management.
- Mr Olivier Rousseau, Executive Director, Fonds de Réserve pour les Retraites (The French Pension Reserve Fund).
- Mr Günther Schiendl, Director and Chief Investment Officer, VBV-Pensionskasse.
- Mr Anil Suri, Managing Director, Head of Portfolio Construction & Investment Analytics, Merrill Lynch Wealth Management.
- Mr Philippe Teilhard de Chardin, Managing Partner, Advisors & Partners.
- Mr Jaap van Dam, Managing Director Investment Strategy, PGGM.
- Mr Jean-Paul Villain, Director, Strategy Unit, Managing Director’s Office, Abu Dhabi Investment Authority.
- Mr Dan Waters, Managing Director, ICI Global.
- Mr Yuan Zhou, Chief Strategy Officer, China Investment Corporation.
EDHEC Business School, founded in 1906 and among the select few institutions to have garnered international recognition through the triple crown of EQUIS, AACSB and Association of MBAs accreditations, offers management education at undergraduate, graduate, post-graduate and executive levels designed to meet the needs of companies. Its large range of international graduate programmes draws students from the world over. With its five campuses in Lille, Nice, Paris, London and Singapore, its 6,500 students, and its 142 full-time faculty and researchers, EDHEC has been ranked among the top international business schools for several years.

As part of its strategy for international excellence, EDHEC Business School has espoused an innovative research policy that takes into account the needs of companies and the market. Research at EDHEC is organised into four centres built on the expertise of the faculty:

- EDHEC-Risk Institute - Asset allocation and risk management;
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