DeRisk

CRISIL's insights and analyses of regulations, macroeconomic factors, guidance and trends affecting the insurance industry

October 2020

Alternative path to ESG heights

Modelling and risk management need focus

Global Research & Analytics

CRISIL
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ESG taking centre stage in alternative assets

The Covid-19 pandemic has coincided with increasing investor gravitation towards alternative investments, where the spotlight is on a moral gatekeeper: environmental, social and corporate governance (ESG) investing.

Two factors have catalysed ESG policy adherence to alternative asset classes and risk modelling:

- Longer-term investment horizons of alternative assets such as private equity and, hence, a greater likelihood of these contributing to the environmental and sustainability agenda.
- Higher levels of empowerment and motivation of asset managers and investment funds to adopt ESG policies, compared with traditional peers.

The current situation is reminiscent of the Global Financial Crisis (GFC) of 2008-09, when fund managers went for a 'hedging response' – a 1-2% increase in exposure to alternative investments because of availability of investment opportunities at attractive valuations compared with the pre-crisis period of 2007. Thus, the share of traditional[1] assets in the total for a sample[2] of insurers, pension funds and superannuation funds reduced.

Our analysis indicates a similar story will play out in this day and time. If anything, it will be more intense and longer lasting.

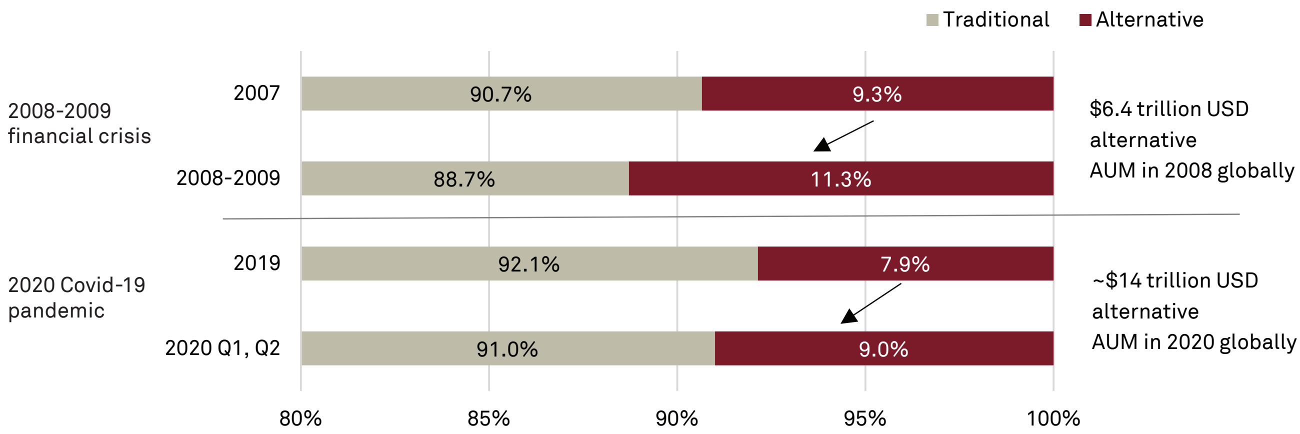
This makes it all the more pertinent for investors to recognise the risks – since ESG investing does have its own set of risks – and then to measure and model these accurately. This paper explains how to do that.

[1]*Traditional assets include the categories of stocks, bonds, and cash assets.*
[2]*Based on interactions with our clientele and a deep review of the annual reports for a sample of 25 insurers, pension funds and superannuation funds from Europe, North America and Australia from 2007 to date, referred to in this article as "a sample of insurers, pension funds and superannuation funds".*

ESG has been a hedging focus since the GFC

The following exhibit shows the hedging[3] responses to the GFC in 2008-2009 and to the pandemic in the first two quarters of 2020. In both instances, investors increased exposure to alternative assets vis-à-vis pre-crisis levels.

Exhibit 1: Two crises, one strategy: Global alternative AUM[4] rose during the GFC, like now



Source: Asset allocation percentages for the sample of insurers, pension funds and superannuation funds

Hedging responses in Exhibit 1 reflect an increased exposure in percentage and materiality terms for the 2008 and 2020 crises. While the percentage change reduced from 2% to 1.1%, materiality increased from $6.4 trillion to around $14 trillion for alternative AUM globally.

Despite the pandemic investment shock, alternative AUM globally will continue to increase. We estimate it to reach $16 trillion by 2023, representing a 15% jump in just three years, assuming an average annual growth rate of 4.6% per year.

ESG and alternative investing in the new normal

The market capitalisation of European insurers is recovering from the effects of the first quarter of 2020, when it shrank 50%.

It may be recalled that, during the GFC, European market capitalisation had plunged 70% starting mid-2007 through the first quarter of 2009.[5]

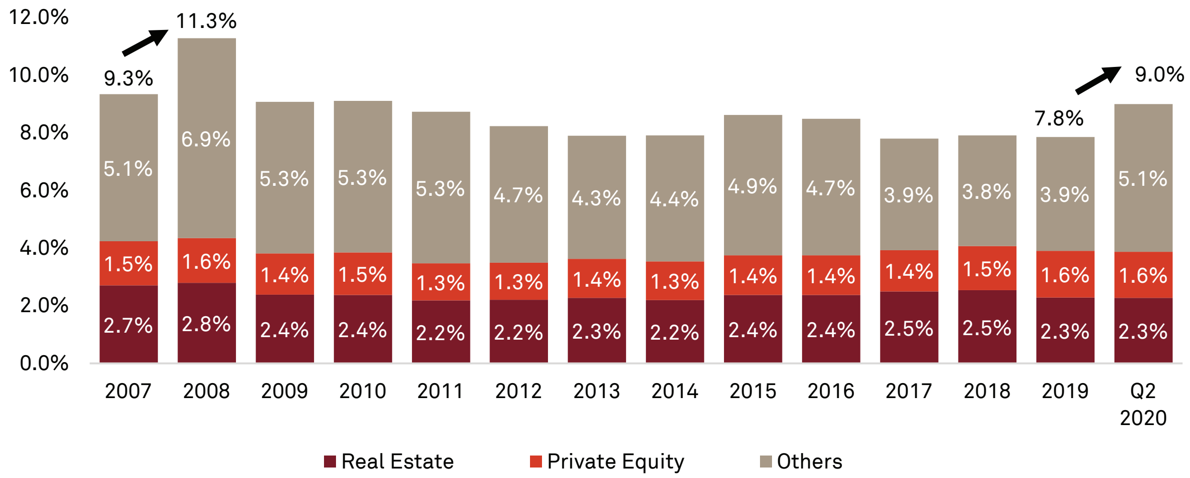
As in the earlier instance, recovery has been at a different rhythm across the globe. Also, since there has been an increase in exposure to alternative assets, the industry has sought to protect market capitalisation by accelerating the ESG agenda.

The insurance industry has sought to protect market capitalisation by accelerating the ESG agenda

[3]Hedging in this context refers to changing the asset allocation to neutralise or mitigate the risk associated with low return on traditional investments. It is a type of hedging process by moving to alternative investments.
[4]Assets under management (AUM)
[5]Percentage decline based STOXX 600 index for European insurers

The following exhibit shows the proportion allocated to alternative assets and its constituents, and how that changed during the 2008 and 2020 stress events.

Exhibit 2: Allocation to alternative investments: GFC to the pandemic



Note: Others include derivatives, hedge funds and other money market instruments
Source: Balance sheets from a sample of insurers, pension and superannuation funds

Insurers, pension funds and superannuation funds manage their risk exposure using reinsurance, coinsurance, and geographic/product diversification, along with hedging (see 'others' in Exhibit 2).

Recent trends show that ESG-focussed derivatives have gained momentum, due to their ability to offer investors a liquid and cost-efficient way to manage undesired risks and helping them align their ESG investment mandates. For example, in February 2020, Eurex launched STOXX USA 500 ESG-X to support investors in their sustainable investment strategies beyond Europe.

Across the alternative assets mentioned in Exhibit 2, private equity provides a more liquid investment horizon with the potential to make an impact through ESG policies, and gives more freedom to apply a wider diversity of investment strategies.

For example, many insurers in Europe increased their exposure to private equity: [6] in the case of Aegon, their exposure increased by 40% from 2018 to 2019. We estimate private equity AUM will reach $5 trillion by 2023. It has already reached around $4 trillion by mid-2020, revealing a more intense and accelerated focus on private equity investments than anticipated (in 2018 this figure was just $3 trillion).

Traditionally, real estate also attracted investors due to its low correlation to other assets and its ability to offer an appealing income and yield opportunity. Post-pandemic, reliance on this asset class may be reduced gradually.

Investors, however, continue to increase their commitment to sustainable buildings and demand for LEED certification across the world.[7] For example, in its annual 2019 US Green Building Adoption Index, CBRE noted that, across the 30 largest US office markets, about 4,900 buildings (42% of commercial space) have now been certified as 'green.[8]

Reviewing our sample of insurers, pension funds and superannuation funds against the Principles for Responsible Investment (PRI)[9] survey by the United Nations, around 40% of the alternative assets reported[10] were found to adhere to a type of ESG.[11] But the remaining 60% were non-ESG investments, attributed to different factors, including lack of

[6]Based research from EIOPA and Solvency and Financial Condition Report (SFCR) information
[7]https://www.usgbc.org/articles/green-building-accelerates-around-world-poised-strong-growth-2021
[8]https://www.cbre.us/research-and-reports/US-Green-Building-Adoption-Index-for-Office-Buildings--2019
[9]UN-supported initiative PRI has a reporting project on responsible investment https://www.unpri.org/pri/what-are-the-principles-for-responsible-investment
[10]The reported figures by insurers do not necessarily match the amounts included in the financial statements due to corporate structure of entity reporting into PRI.
[11]This ESG adherence process, includes: the selection of asset managers, identification of assets investments, and monitoring.

material engagement in asset class (low exposure) or ESG policy maturation, since specific policies, practices and requirements were lacking.

Since 2017, the number of signatories to PRI (insurers, pension funds or asset managers) has more than doubled[12] from 296 to 620 in 2020.

Thus, while private equity investments have a strong focus on alternative assets, assessing the level of adherence within the industry to ESG is not a trivial exercise.

The rise of private equity investment preference

Overall, institutional investors seem to be benefiting from the tilt towards alternative investments, with some (including pension funds) increasing their exposures significantly.

For example, many US public pension funds plans are considering bringing in $100 million of fresh capital to commit to private equity in the next 12 months.[13]

Asset managers explore diverse investment opportunities around private equity, including:

- Stable businesses that are currently affected by the crisis.
- Businesses that were in turmoil before the crisis and are now worse off.
- Businesses that have benefitted from the crisis.[14]

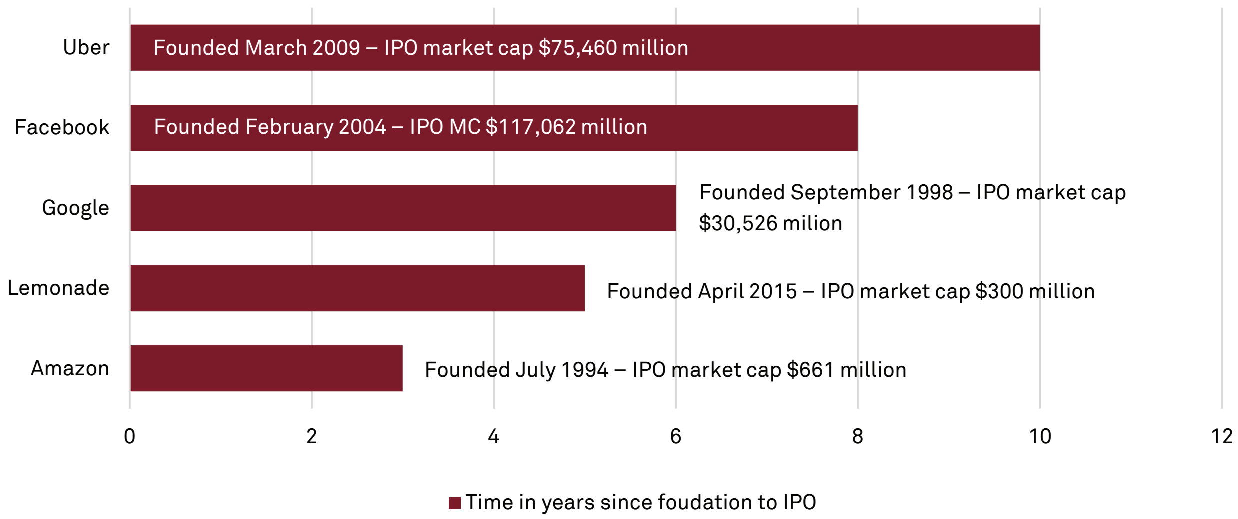
This environment enables private companies to rely more on private money than public cash, as seen in holding back of initial public offers (IPOs) of major corporates. Exhibit 3 shows how long some tech companies took to go public.

Various factors have contributed to delaying time-to-IPO, including the behaviour of venture capitalists, the quest for higher returns, investment sophistication, industry transformation and regulation.

For instance the number of IPOs in the US declined from 700 in 1996 to barely 150 in 2019. The US insurtech Lemonade is an outlier as, just after five years from its foundation (April 2015), it went for an IPO in July 2020 raising $300 million and 140% market capitalisation.

This indicates an increased tilt towards financing via private equity.

Exhibit 3: A clutch of tech giants have waited before going for an IPO



Source: CRISIL Research

[12]https://www.unpri.org/signatories/signatory-resources/signatory-directory
[13]Prequin's private equity survey - https://docs.preqin.com/reports/Preqin-US-Based-Public-Pension-Funds-Private-Equity-Activity-May-19.pdf
[14]https://www.crisil.com/en/home/our-analysis/reports/2020/07/in-the-bane-a-blessing-for-private-equity.html

That being said, the level of disclosure from private equity companies is often low. Besides, alternative investments come with limited guarantees. Investors should, therefore, be cautious of their pitfalls and unique risks compared with traditional assets.

The following section attempts to contrast modelling and risk measurement, for the two sets of assets, and details suitable methodologies for alternative assets.

Modelling and risk measurement in alternative assets

In its early stages, ESG investing was biased towards traditional assets such as shares, bonds, and cash equivalents, mainly because data and the different underlying risks-methodologies to measure them were already available. Some common methodologies included (see Exhibit 4):

- Value-at-risk (VAR) model: VAR is a measure of risk of loss for investments and is used for measuring market risk and helps identifying the risks of stocks and bonds, commodities, foreign exchange, and structured products in the financial market. It is an approved method for measuring risk by various regulators.[15]

- The capital asset pricing model (CAPM): It determines the expected returns on capital investments and is widely used to evaluate and minimise risk on the investment as it relies in proportion of the beta[16] of the investment with the market risk premium (which is calculated as the difference from the risk-free rate and the expected return on assets).

Traditional measures of risk and return such as these usually do not provide enough understanding of an alternative asset's risk and return features. They may even be entirely unreliable and/or inappropriate. Also, since almost all alternative assets lack real time market values, traditional risk/return measurement methodologies can be misleading.

Modelling to catch up to alternative assets under ESG

Given the unique risk-and-return profiles of alternative assets — factoring the associated illiquidity and lower transparency – insurers, pension funds and superannuation asset managers need new modelling approaches to estimate their risks and returns. Measuring risks and returns is an imperative all the more when alternatives are used as a way to implement ESG policies.

During the World Economic Forum (WEF) in Davos, Switzerland (January 2020), ESG topics dominated the agenda. Hence, the WEF's International Business Council (IBC) created a consultation survey "Toward Common Metrics and Consistent Reporting of Sustainable Value Creation"[17] that even brought together the Big Four accounting firms to identify a common, core set of ESG metrics and

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Exhibit 4: Modelling for traditional assets

Model	Typical model uses	Pros	Cons
CAPM	• Theoretical determination of the rate of return of an asset • Relationship between expected return and risk of investing in a security	• Provides a diversified portfolio • Transparency between risk and return	• Large number of assumptions • Limited ability to borrow at risk-free rate
VaR	• Determines the level of cash reserves required for a given loss • Estimates potential portfolio losses at a given confidence level	• Good interpretability • Available in multiple risk software and tools	• Risk aggregation difficulties • Misleading with large long tail risks

Source: CRISIL Research

[15]Office of the Superintendent of Financial Institutions (OSFI) in Canada, Prudential Regulatory Authority (PRA) in the UK, Securities and Exchange Commission (SEC) in the USA, and the European Banking Authority (EBA).
[16]$r_a = r_F + \beta_i (r_M - r_F)$, where beta is the measure of risk or volatility of a portfolio compared with the whole market.

recommended disclosures for all companies to report on, across sectors and geographies[18] for the 4 pillars (principles of governance, planet, people and prosperity) and 22 metrics in the consultation.

While the new proposals of pillars and metrics are being considered by the industry, many of the potential risks in ESG modelling can be captured during the screening process at the due diligence stage. Should any concerns arise at this stage, the transaction can be referred to the relevant ESG experts within the organisation. The outcome of this assessment should decide whether to proceed with the transaction or decline the strategy, based upon ESG grounds. See Exhibit 5 for strategies on private equity.

In order to clear a transaction from ESG perspective, the best practice is to integrate a scoring approach where each transaction is assessed on a given set of ESG issues, then arranged on the priority that the asset manager/ investment fund wants to focus on. These issues may include, for example, carbon emissions, product safety and quality, data protection, corruption, etc. In case the ESG score meets the necessary threshold, the transaction is deemed fit to proceed for modelling.

Exhibit 5: Private equity strategies and adherence to ESG

Strategy type	Description	Adherence level to ESG
Buyout	When a company borrows a significant amount of money to acquire another company, includes investment in more mature business	Medium
Venture capital	Investing in insurtechs, fintechs, startups, early stage emerging businesses that have high growth potential but limited access to other forms of capital	High
Growth	Includes investment in mature companies that are looking to expand their businesses or enter new markets	Medium
Special situations	Businesses that require funds for restructuring or any other unusual circumstances, such as mergers, acquisitions, bankruptcy, etc.	Medium
Other	Includes secondaries, fund of funds, turnaround, balanced and co-investment	Low

[17]https://www.weforum.org/whitepapers/toward-common-metrics-and-consistent-reporting-of-sustainable-value-creation
[18]https://incp.org.co/Site/publicaciones/info/archivos/ESG-Metrics-Discussion-Paper-16062020.pdf

Alternative asset modelling is not just about risk factor determination; it also needs to take into consideration strategy. The chosen strategy and asset class type has a direct impact in the modelling framework and risk assessment practices.

The type of investment strategy mentioned in Exhibit 5 reflects how a company is adhering to ESG policies. There is a linkage between how well the company benefited from its investments and to what extent it complied with or adhered to ESG principles.

The Low, Medium, and High tiering refer to the level of transparency of the strategy in complying with ESG principles.

For example, assessing "other" strategies, such as how a fund of funds is adhering, has many limitations due to the mix of funds and low level of disclosures; this leads to "Low" adherence to the building blocks of ESG.

A "growth" or "buyout" strategy investment in a mature business or company, on the other hand, has a "Medium" level of adherence as many organisations are still developing ESG policies and frameworks, particularly around environmental and social implications of its activities and supply chain.

In the case of the "venture capital" strategy, the potential for ESG adherence is "High" because the investors can choose an emerging business or organisation that maps with more rigour to their ESG policies, with the caveat that the governance component may not be fully strong as new companies typically lack the level of accounting disclosure of a public company.

Under the venture capital route, the private investor undergoes a set of contractual benefits or targets as well as obligations that would percolate into the cash flow modelling:

- Infrastructure investments for insurers in Europe are determined by following the European Insurance and Occupational Pensions Authority (EIOPA)'s risk factors.[19]

- Debt investments typically use credit risk probability and default methodologies.

In the case of private equity for infrastructure investments, modelling would include political, structural, financial, construction, operational, design and technological risk factors.

Financial risks also require more granular analysis around unpredictability of revenue, taxation, market, counterparty, contractual, curtailment and resource risks. These risk factors are typically enunciated in ESG policies by insurers.

Alternative asset modelling is not just about risk factor determination; it also needs to take into account strategy

The model developer includes ESG into risk assessment by deploying a combination of internal models, frameworks and tools, coupled with fundamental analysis or external research, to bring transparency into the alternative asset modelling processes.

Risk factors also depend on the type of private equity investment. For example, compared with an infrastructure investment, an investment in a sports team will not have a construction risk factor to be measured. Hence, identifying and assessing specific risks is key in alternative investments.

Identification of risk factors is essential for ESG adherence and risk measurement:

- Assessment of risk materiality helps in prioritising actions and determines the level of importance of such a model. For example, ESG and investment policies have limits that establish how much is going to be invested and the percentage of total portfolio exposure.

- A health assessment enables analysis around causes of risk and determines the level of complexity of the models. It captures ESG metrics or sustainability indices, along with feedback received from supervisors, auditors, and other lines of defence. For example, the supervisor may already have a guideline showing a list of risks for the given ESG index or asset class.

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[19] *EIOPA-BoS-15-223, Final Report on Consultation Paper no. 15/004 on the Call for Advice from the European Commission on the identification and calibration of infrastructure investment risk categories. EIOPA, 2015. https://register.eiopa.europa.eu/Publications/Consultations/EIOPA-BoS-15-223%20Final%20Report%20Advice%20infrastructure.pdf*

- Risks inherent in models are typically not covered in ESG policies. However, the modelling needs to adhere to MRM best practices depending on the context of use, which needs to be understood, measured, inventoried and mapped correctly in the ESG framework. For example, a renewable energy model needs to use the correct modelling and risk factor mapping.

Adherence to the above considerations increases the ability to perform due diligence and analyse whether the alternatives investment strategy can be implemented according to the ESG or alternative asset investment in place.

Exhibit 6 shows two modelling approaches – based on benchmarking and net present value (NPV) – that deal with risk management and compliance perspectives. For example, the S&P Green Bond Index is benchmarking mechanism for some asset investments. The green bond market reached $687 billion in October 2019, while following Green Bond Principles (GBP) that come from voluntary standards of industry participants. When the index started in July 2014, there were only 118 constituents, but this figure had risen to 5,498 by October 2019 and further to 7,012 by August 2020.

Exhibit 6: Private equity modelling methodologies and pros and cons of ESG adherence

Type	Benchmarking	NPV simulations
ESG pros	• Acts as a starting point for portfolio managers to get an understanding of an investor's risk-tolerance and return expectations. It also provides a basis for comparison of the portfolio's performance vis-a-vis the rest of the market.	• Stochastic simulations can be used for forecasting the probability of various outcomes, forecasting the variations of prices, returns on assets and probable cash flows around the risk factors.
ESG cons	• However, there are not many indices or benchmarks that act as a one-size-fits-all measure to assess the risk characteristics or performance of alternatives. One logical answer is to formulate a methodology for creating unique benchmarks for each alternative asset.	• Simulation methodologies such as Monte Carlo are computationally expensive, require expert judgement and very granular data, and involve the generation of hypothetical trials to the models to obtain plausible cash flows as impacted by the risk factors.

Conclusions and the way forward

Alternative investments are seen to have potential to achieve higher returns, better risk diversification and a mechanism to accelerate the ESG agenda. However, insurers, pension funds and superannuation funds cannot manage this investment industry transformation if they cannot measure it.

Hence, the inherent complexity in identifying risks and developing model methodologies are important for alternative investments and adherence to ESG principles, practices and policies.

Best practices require:

- Robust model risk management practices.
- Centralised data sources for consistent modelling.
- Risk assessment of investments and materiality analysis.
- Mapping of investments to specific risk tiering (ESG policy).
- Frameworks to measure ESG policy risk factors from alternative asset investments.
- Real-world assumptions, expert judgement and consistency with investment strategy contracts.
- Integration of a scoring approach where each transaction is assessed on a given set of ESG issues.

Key modelling recommendations:

Coverage

Established and emerging, on- and off-balance sheet, measurable and hard-to-model risks, and long list of risk factors.

Granularity

Causal events/drivers, as well as risk types and models, relationship between risks and business activities/hierarchy.

Materiality

Consistency across risk types and models, based on likelihood, severity and most material tail risk.

How CRISIL helps its clients

We at CRISIL help our clients by extending our understanding of risks to scrutinise investments from an ESG perspective.

At CRISIL, we have decades of global leadership and experience advising insurers, pension funds and asset fund managers around model risk management for alternative assets. We help to analyse investments from an ESG perspective and seize potential business opportunities.

Our insights help to unlock current investment opportunities and also unveil potential new opportunities, increasing benefits while mitigating risks.

Our suite of services includes:

- Organisational constraints and gap analysis in adherence with ESG.
- Model benchmarking, alternatives and limitations.
- Risk identification and quantification.
- Model development and validation.
- Analysis of operational and governance considerations.

Our experts can advise insurers, pension funds or asset fund managers to assess prospective alternative investment opportunities and help them to weigh the corresponding benefits and risks.

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