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PENSION FUNDS LETTER

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Amundi ASSET MANAGEMENT

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EXECUTIVE SUMMARY

COP26, COVID-19: more pressure for a green future

The coming of summer has also seen the return of extreme heatwaves, catastrophic flooding and devastating forest fires. The arrival of the COP26 could not be more timely given the need for a universal response to the climate crisis. Pension funds as major global asset owners have a key role to play in this response.

Many hopes hinge on the upcoming COP26 especially given the renewed will from the US to address the climate crisis. The Covid-19 crisis in many ways offers an opportunity for a global accord to influence the deployment of massive recovery packages. As investors become increasingly focused on reducing their carbon footprint, we explore some of the actions pension funds could take, from setting responsible investment targets, assessing current exposure to activating strategies for achieving their climate objectives.

Another issue facing investors is the decision of how to incorporate ESG issues into portfolios, in particular within a Strategic Asset Allocation (SAA), the cornerstone of portfolio construction for pension funds.

But how do markets reflect investor's environmental preferences and how are these preferences measured and observed? Academics have been studying different ways of estimating investor's preference for green assets, unrelated to fundamental data. This has led to the construction of a green sentiment index showing how "greener" firms can profit and outperform when attitudes towards them are positive.

Regulators are also influencing pension fund's attitude towards responsible investing. The UK and EU are well advanced with proposals to impose climate-related risk assessment and disclosure, whilst the Biden administration is also expected to issue directives with a similar angle.

Finally, as reported in the last edition of the Pension Funds Letter, 2021 has brought some encouraging news to pension funds in terms of improved funding status. Let's look again at the recent trends in some of the key markets.

To conclude, pension funds have started their journey towards greater integration of climate change considerations within their investments, but undoubtedly there is still a long way to go.

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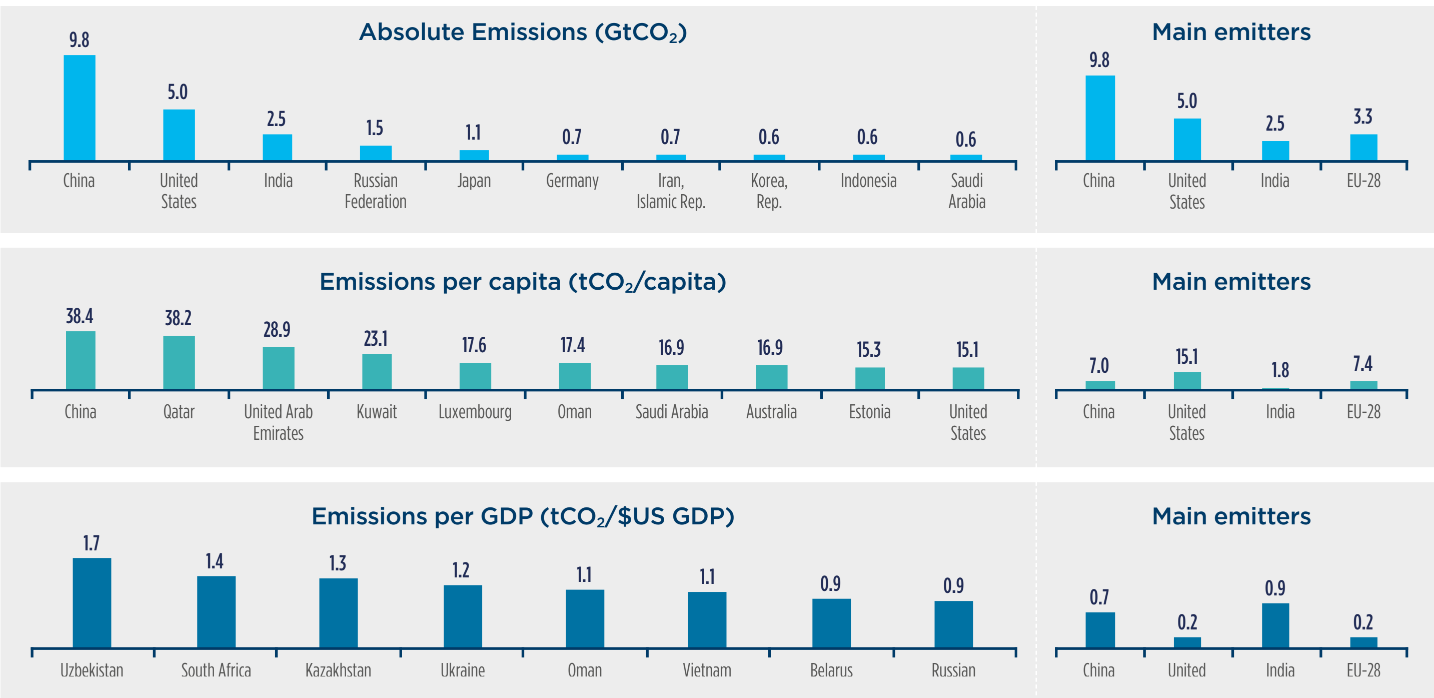
COP26 as a “crunch” point – A call to action for global pension funds

1. The Glasgow COP26 – A make it or break it moment

The Conference of the Parties (COP) 26 in Glasgow should be a new turning point in the global fight against climate change, with a more climate-friendly US administration and growing mobilization on “net zero”. Six years on from the Paris agreement, the objective is clear: limiting temperature rise to well below 2°C above pre-industrial averages, which means reaching net zero carbon emissions by 2050, and cutting them by half by the end of this decade.

The US have returned to the Paris Agreement and President Biden has made ambitious announcements at the recent Climate Ambition Summit he hosted in April: the US announced a target of 50% reduction in greenhouse gas (GHG) emissions by 2030, versus 55% for the EU. Several countries followed suit, notably Japan (46% reduction by 2030 from 26%) and Canada: 40-45% reduction versus 30%.

> *“[...] with $47trillion in pension funds globally, this sector plays a major role. We need to get our savings for the future, shaping the future.”*
>
> Alok Sharma, COP26 President, at the Net Zero Pensions Summit



Source: BP Statistical Review 2020, World Bank Data 2019

The path ahead is long and uncertain. After a slight curbing in 2020 due to Covid-19 restrictions, this year carbon emissions are expected to rise at the second fastest annual pace on record, second only to the rebound after the Global Financial Crisis (GFC) in 2008. This runs against the growing narrative from policymakers and the private sector, who claim that climate change is the top priority on the global agenda. Indeed, we have seen climate change take centre stage in global macroeconomic and geopolitical dynamics, especially with regards to the US-China relationship.

In this regard, the Covid-19 crisis should be considered as an opportunity. A majority of countries are now exploring major recovery packages, with some featuring a green dimension. The world's leading economies have all announced stimulus packages ranging from billions to trillions of dollars, with inevitable impact across sectors on carbon emissions and nature. This begs the question: how green will those recovery plans be? The answer, so far, is contrasting. While much remains to be seen for the US, it is already clear that emerging economies have failed to step up, with China, India and Brazil notably sidestepping environmental issues, despite large announcements on solar, wind, battery and forest investments. Unsurprisingly, the EU continues to lead the pack, with its Next Generation EU package. In the Union, all recovery loans and grants to member states will have an automatic 'do no environmental harm' clause. In addition, the European Commission has just proposed a set of "Fit for 55" measures that aim to cut the bloc's GHG emissions by 55% by 2030.

To date, almost a third of stimulus announced across the globe will flow into sectors that have negative impacts on climate change and/or biodiversity. The COP26 presents a key opportunity to change course and refashion these plans.

Investors are increasingly making welcomed announcements in terms of reducing carbon footprints. Figuring out how to translate ambition into reality will be the challenge. On this front, it will be crucial for investors to assess their starting point, to define a short, medium and long-term course of action, and to design a plan that encompasses all facets of their business activity: from investment to reporting. New indicators (such as temperature scores), new tools (such as climate risk stress testing) and new methodologies (such as integration of climate change considerations within Strategic Asset Allocation) are becoming available. They all have their respective merits and drawbacks, but gaining early exposure to such innovations will enable investors to familiarize themselves with these new approaches, to be ready when key decisions will need to be taken. As Alok Sharma, President of the Glasgow COP26, puts it "There is a real advantage in getting your house in order, and early [...]"[1].

2. A call to action to the largest investors globally

Pension funds are progressively being commanded by their different stakeholders to do their "fair share" in the global fight against climate change.

A key stakeholder that pension funds, contrarily to other institutional investors, need to account for is their members. Several pension plans, especially representing industries or activities that are related and/or severely impacted by climate change, are starting to come under pressure to take climate change into consideration in their investments in terms of risk management but also in terms of contribution towards a low-carbon economy (a notable recent example in box 1).

Governments and regulators are also initiating inquiries and issuing laws and regulations making the consideration and disclosure of climate change risks (and opportunities) mandatory for the largest pension funds. An update on the most recent climate-change related regulations for pension funds can be found in the article *Fiduciary Duty: More than Financials*. Interestingly, in the UK, leading companies such as IKEA and Ernst & Young have signed the "Green Pensions Charter" committing to Net Zero emissions, thus even anticipating the regulatory requirements[2].

This year, leading to the COP26, has also seen the first "Net Zero Pensions Summit", with renowned speakers such as Mark Carney and Alok Sharma highly encouraging pension providers and funds to join the "Race to Net Zero" wagon, putting their impressive $50tn financial firepower to best use.

It is thus clear that pension funds will not long be able to ignore these strong pressures from multiple directions. Indeed, a number of pension funds have started actively mobilizing in several ways, for instance by joining the UN-Convened Net-Zero Asset Owner Alliance (NZAOA)[3]. It can also be expected that a global industry-specific initiative dedicated to pension funds will be introduced, after the Central Banks' Network for Greening the Financial System (NGFS) and the Net-Zero Insurance Alliance.

Having a well-defined ambitious science-based plan, like for instance that promoted by the NZAOA, to cut portfolios' emissions in line with the Paris Agreement objectives is the necessary starting point. Well-defined in terms of clarity of measurements used and of intermediate and final objectives; ambitious in terms of alignment with the Paris Agreement; science-based in terms of using commonly used measures, such as the Science Based Target Initiative (SBTi) sectoral decarbonisation objectives, to which many corporates are committing.

1. https://www.pensionsage.com/pa/Pension-funds-globally-urged-to-act-on-net-zero-goals.php
2. https://www.express.co.uk/news/nature/1438262/green-britain-richard-curtis-backs-eco-pensions
3. https://www.unepfi.org/net-zero-alliance/

Box 1 - Pressure from pension plan members: how are my savings managed?

Pension plan members are increasingly recognising their influence over the management of their savings. An example of this increased interest and "power" of beneficiaries regarding the climate change considerations of their pension is the filing of several claims to Australia's Federal Court by Marc McVeigh, a young pension fund member of Retail Employees Superannuation Trust (REST). McVeigh sued his pension fund regarding the lack of disclosure of information related to climate change business risks as well as the alleged violation of REST's fiduciary duty "to act with care and in the best interests of their beneficiaries"[4]. REST, at the end of a 2-year trial, publicly committed to measure and report on climate related progress in line with the recommendations of the Task Force for Climate Related Disclosure (TCFD) and to reach a net zero carbon footprint for the fund by 2050, in line with the objectives of the Paris Agreement[5].

3. COP26 - What is on the cards for pension funds?

So, what actions should a pension fund undertake in the build up to COP26?

1. **Setting a short, medium and long-term strategy**, with clear objectives in terms of reducing carbon emissions of portfolios, investing in green activities and technologies, and integrating specific themes strongly related to climate change. Several pension funds have already committed to Net Zero by 2050, but a long road still lies ahead to on-board the whole sector and to set clear plans with respect to all other elements of climate change (biodiversity, the social dimension of the low-carbon transition, etc.). On the latter, pension funds, accompanied by their responsible investment managers, can lead the way by, for instance, joining collective initiatives committing to engage with issuers around biodiversity protection or around integrating all societal stakeholders (notably workers, consumers, communities, the whole civil society) in the conversation on the "road to Net Zero".

2. **Assessing the starting point:** what is the exposure to both physical and transition risks from climate change. On this, pension funds could develop a climate risk assessment tool, in collaboration with their asset manager or advisor to provide an overview of both climate risks and opportunities and how the latter change in different scenarios (climate risk stress test across emissions reduction trajectories). These kind of tools are particularly important for long-term investors like pension funds as each temperature trajectory can have disparate impacts on asset values. Investors should also consider integrating new climate data points that can give a different angle: for instance, newly developed temperature scores proposed by ESG data providers, despite not being perfect, offer a more forward-looking understanding than current carbon emission metrics.

3. Based on the objectives set above, **activating levers to achieve these objectives:**
   - At the overall **strategic asset allocation** (SAA) level, integrate environmental criteria, such as exposure to carbon, climate risks (physical and transition), investments in green technologies. SAA decisions are the first step in any pension fund's investment process and therefore have a profound impact on subsequent investment decisions, so it can no longer be considered sufficient to integrate ESG and climate considerations solely through a bottom-up approach (for more, see article *"The added value of ESG in Strategic Asset Allocation"*). In fact, a number of pension funds around the globe have started using ESG-tilted benchmarks in their SAA, such as benchmarks built with similar criteria as the EU Paris-Aligned Benchmarks (EU PABs), with a notable example here being AP2[6]. However, the full integration of climate change considerations into capital market assumptions is still considered a sophisticated practice to aspire towards.
   - Integrating **carbon considerations in investment strategies**, by decarbonizing portfolios over time to meet Paris Agreement objectives.

     In passive strategies, an obvious option is to consider Paris-Aligned or Climate Transition benchmarks.

     In active strategies, portfolios can set decarbonisation targets, versus their benchmark; some pension funds have started adopting a double benchmarking practice, with a standard index for financial performance and an ESG-tilted index for impact monitoring, to be better able to respond to their Board's requests for clarity regarding climate strategies. Moreover, engagement should be a key lever to accompany corporates in developing and implementing robust environmental strategies: for instance, engaging with portfolio companies to encourage them to commit and set SBTi targets. Active investors can also exploit the green premium by selecting not only companies that are champions in the green transition today, but also companies that currently lag behind in terms of ESG rating but are putting in place initiatives that will help them to be among the leaders of tomorrow (the so-called "improvers" approach).
   - Investing in **green activities**, including carbon capture or reduction technologies, for instance through green bonds or green thematic strategies.
   - **Reporting clearly on the objectives and the progress made**, and regularly reviewing the starting objectives. As mentioned in the article *"Fiduciary duty: More than just financials"*, regulators' demands to report on climate change risks in line with the recommendations of the TCFD are increasing, thus pension funds should start acting now to avoid having to catch up later.

4. https://www.lw.com/thoughtLeadership/ESG-litigation-roadmap
5. https://rest.com.au/why-rest/about-rest/news/rest-reaches-settlement-with-mark-mcveigh
6. https://ap2.se/en/paris-aligned-investment-initiative-approved-as-a-race-to-zero-initiative-2/

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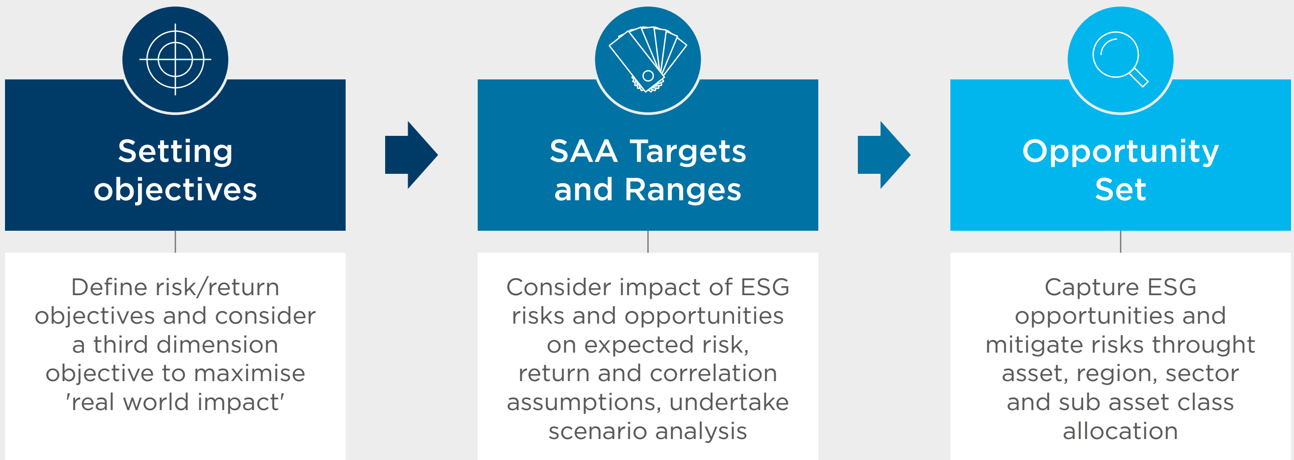
The added value of ESG in Strategic Asset Allocation

How to address the question of integrating ESG factors in to Strategic asset allocation

Current institutional practices

As mentioned in the article *"COP26 as a "crunch point": a call to action for global pension funds"*, one of the levers at pension funds' disposal is to integrate climate change criteria within their Strategic Asset Allocation exercise. Given that Strategic Asset Allocation (SAA) is one of the cornerstone of a pension fund's portfolio construction[7] and ESG considerations are becoming a major factor for investors[8], trustees, or regulators, the industry has been working on how to efficiently integrate ESG in SAA. In this context, a UN PRI initiative[9] has been an active promoter of ESG in SAA.

UN PRI : Embedding ESG into SAA Frameworks: Where top down meets bottom up



Source: The PRI Inevitable Policy Response programme

At present ESG is mainly approached through bottom-up processes and there is still much active discussion and no market consensus on how to integrate ESG in an SAA framework that is top-down by nature. Consequently, whilst most pension funds are actively working on embedding Responsible Investing in their allocation process, we have not yet seen any pension funds with a comprehensive process for integrating ESG in their SAA.

This article will discuss how to fully integrate ESG in this strategic framework and where pension funds, and more generally institutional investors, are currently making progress.

Setting the stage for SAA

Responsible Investment beliefs

One difficulty in having ESG as an objective in SAA resides in the overarching fiduciary responsibility that often focuses on financial performance. In the absence of explicit ESG targets in the utility function of the investor, adding ESG constraints in a portfolio optimization mechanically alters its risk/return profile. In addition, the magnitude and the direction of the ESG risk premia are still subject to debate among academics. Therefore, whilst some investors only choose to integrate ESG considerations

7. Brinson, Hood, Singer and Beebower (1986, 1991), Ibbotson and Kaplan (2000), Hoernemann, Junkans and Carmen M. Zarate (2005), Vardharaj and Fabozzi (2007)
8. See Bauer, Ruof and Smeets, 2020 ; Brière and Ramelli, 2021a regarding increasing appetite from pension plan members into socially responsible (SR) investment.
9. UN PRI : Embedding ESG issues into Strategic Asset Allocation Frameworks (2019)

to the extent it has limited effect on expected returns[10], many (like AP1, AP3 in Sweden and ABP in The Netherlands) are now explicitly integrating Responsible Investing and Sustainable goals in their overarching Investment Beliefs[11].

Examples of investment beliefs including ESG convictions:

AP2	AP1	ABP
Sustainability pays off	**Sustainable value creation** The priority is on well-managed companies and other investment objects. **Cost efficiency** The return level should not be burdened by inefficient cost utilisation.	ABP can invest responsibly and make the investment portfolio sustainable without this being at the expense of the portfolio's risk-return profile.

Source: AP1; AP2 and ABP's public website

> *"Discussions should be had at board level to decide on beliefs. This is important given the debate surrounding this theme."*

Sustainable objectives and targets

Engagement and explicit shareholders activism around ESG issues have been growing rapidly over the past few years (e.g. Swedish APs, Dutch ABP and Danish PFA). As supported by academic literature[12], engagement is an efficient way to translate investment beliefs into concrete action, in particular at a domestic level for public pension funds. In addition, many pension funds are now taking a further step by integrating explicit and quantifiable "sustainable targets" in their asset allocation process, in particular around CO2 emission reduction targets (e.g. Swedish APs) and SDGs contribution.

> *"Focus on objectives that your institution can assess quantitatively."*

Investment Horizon

Strategic Asset Allocation is usually a long-term exercise and there is broad consensus that in 15 to 25 years, ESG issues, and particularly climate change issues, will be having a significant impact on our everyday lives. As markets are gradually assessing and incorporating the consequences of these inevitable changes, there is a benefit to integrating ESG in SAA to ensure a resilient portfolio structure and eventually play an active role on ESG related issues (e.g. CO2 emission reduction, inequality reductions). For pension funds, the potential impact ESG secular trends could have on liabilities (e.g. inflation, mortality risk) needs to be assessed at the ALM level. Meanwhile, many investors have shorter strategic investment horizons (for some 3 to 5 years), and it is quite possible the market will continue to underestimate these investors' increasing taste for green assets. In addition, ESG considerations should continue to evolve over time to incorporate shifting preferences (from environment to more social themes for instance) and different horizons over which E, S and G components influence asset prices[13].

> *"The inclusion of ESG will have a different impact for different investment horizons."*

Return assumptions

Capital Market assumptions

The contribution of ESG factors to returns, or more precisely the magnitude of this contribution, is still much debated. Some studies show that historically these have contributed positively to returns while others are less favourable and attribute the effect to short or medium term factors[14]. Meanwhile empirical data appear to show a significant shift in investors' preferences, redirecting flows to ESG assets and affecting their relative risk premia vs traditional assets. The example of green bonds is particularly telling. Forward-looking studies (at the core of the SAA framework) are also trying to assess what the impact of ESG on equilibrium models could be. This requires a clear understanding of how and why ESG risk premia are expected to fluctuate (e.g. do ESG or green bond risk premia still have room to improve?). The debate continues with mixed findings, in particular towards the impact of ESG on fundamental valuations at the microeconomic level[15].

Investment universe

Once a decision to incorporate ESG in the allocation has been made, the question becomes how to translate this into actual asset classes and portfolios.

The first option is to retain traditional asset classes but ensure that all are invested in an ESG compliant way (e.g. exclusion, best in class). This option requires an efficient monitoring and compliance system.

A second option is to include thematic and impact funds,

10. "Regardless of age, three quarters of [Dutch workers] find it important their pension is invested sustainably, even though most believe this should not go at the expense of returns [...]" IPE article Dutch workers expect lower pensions in DC system | News | IPE
11. ABP and AP1 for example
12. Cuñat, Gine, & Guadalupe, 2012 ; Flammer, 2015
13. MSCI Deconstructing ESG ratings performance, risk and return for E, S, G by time horizon, sector and weighting (2020)
14. For example, just focusing on the pricing of firms' CO2 emissions, some previous empirical evidence shows that environmentally sustainable firms tend to ourperform (see e.g. In, Park and Monk, 2019), while others find that firms firms with higher CO2 emissions earn higher returns (Bolton and Kaperczyk, 2021)
15. Margolis et al., 2009, Ferrell et al., 2016, In, Park and Monk, 2019, Bolton and Kaperczyk, 2021

new asset classes such as green bonds, social bonds, or ESG-oriented thematic strategies. The link between holdings and responsible investing metrics is then relatively direct. Meanwhile, because these instruments bear a similar financial risk to traditional ones, it may only make sense to identify them in the SAA if they have a very large weight in the allocation.

Alternatively, traditional asset classes that have a more explicit link with the United Nations Sustainable Development Goals (UN SDGs) can be favoured. Here real and alternative asset classes, in particular Real Estate and Infrastructure are preferred as they allow direct channelling of funding to social housing, renewable energy or critical infrastructure.

A challenge in defining the investment universe is that, apart from specific asset classes that are very transparent, integrating ESG in traditional asset allocation requires a granular sector/geography approach. The final portfolio will thus deviate from traditional indices and having a noticeable ESG tilt requires substantial deviation from standard SAA (more tech, less traditional industry, more EU, less EM).

Example of AP's allocation to green bonds

	AP1	AP2	AP3	ATP
Green Bond Allocation as of 31/12/20	5.3%	3%	4.4%	3.06%

Source: Pension fund annual report

> *“There is no clear-cut view on ESG impact on returns. But that should not prevent some ESG factors being added to the allocation with asset classes that conform with an ESG framework.”*

SAA Modelling

Optimization process

SAA frameworks usually comprise of a quantitative step formed around optimization. If there is a clear consensus and best practice framework around mean-variance optimization, including a quantitative ESG objective on top of market risk and return creates a multi-objective problem that can prove technically challenging to resolve. Current practice aims to return to a 2-dimension optimization, fixing one parameter (risk for instance) before maximizing return under a minimum ESG rating, shifting the efficient frontier. This is not very satisfactory, as it does not properly factor in the utility function of the investor (e.g. balance between financial and ESG risks), nor fully grasp risk and diversification benefits. Academics are currently striving to find the best quantitative approach to this multi-objective problem. Progress should be closely monitored to continue to improve the quantitative integration of ESG in the SAA.

Risk limits and constraints

SAA also needs to be balanced with qualitative assessment to integrate/control risks that are not easily modelled (e.g. liquidity risk, operation risk, reputational risk, tail risk). ESG is no different and can be managed with explicit ESG-related limits and constraints in the allocation process, like minimum ESG ratings or climate stress tests as, for example, what is being done by CPPIB in Canada.

It is interesting to note that risk limits, in particular their horizon, need to be adapted to Responsible Investing. In the short term, they can be expressed similarly to traditional SAA, focusing on worst-case scenarios (e.g. crash markets, GFC). Over the long term, it is more relevant to assess how long-term trends impact the return/risk profile, thus creating substantial differences between “normal” SAA and ESG SAA, under “long-term” climate transition scenarios for example.

Benchmarks

If not formally in their SAA, the majority of pension funds still partially integrate some ESG dimensions in the overall asset allocation process via:

- Arbitrage vs traditional asset classes at the portfolio construction level (e.g. green bonds) while minimizing the financial impact (usually a TE minimization exercise)
- Inclusion of ESG benchmarks in SAA (e.g. EU Paris-Aligned Benchmark for AP2 in Sweden)
- Dual benchmarking of managers with a traditional index (for financial performance assessment) and an ESG benchmark (for impact measurement)

> *“Using ESG compliant benchmarks makes sense if your institution can invest accordingly.”*

ESG in SAA: our “two cents”

Comprehensive integration of ESG in SAA is a challenge still to be overcome by the industry. Whilst no market consensus has yet been found on how to tackle the issue, significant progress has been made recently (from standardization of ESG data, metrics and objectives to systems improvements). Integrating ESG in allocation is more than a technical question of benchmark, expected returns and optimization, but rather a holistic way to look at your portfolio. Hence the role, for example, of the Total Portfolio Approach or TPA[16] (that allows a top-down and granular factor-based approach; probably more adapted to ESG than the traditional asset class segmentation of SAA), of regulators or of representation of investment beliefs. Additional challenges of integrating ESG reside in which bottom-up approach to choose (e.g. negative screening, positive screening, full integration), or selecting external managers, but also risk management and producing consolidated reports measuring and assessing portfolio's exposure to ESG factors or UN SDGs. We will address this topic in more detail in a future Pension Fund Letter.

16. https://research-center.amundi.com/article/multi-asset-solid-total-portfolio-approach-complex-world

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Stock returns and corporate behaviour: The impact of evolving green preference

The past decade has seen significant **changes in the way investors perceive environmental risks.** There are several reasons for this. First, the information available on the cost of climate change has grown considerably, for example on major hurricanes such as Katrina and Sandy, or wildfires. In addition, various regulatory actions have emerged, especially in Europe (the European Commission action plan for sustainable finance, green taxonomy, European labels, etc.), to improve the transparency of available climate information and encourage investors to take environmental criteria into account in their portfolio construction (Barberis, Brière and Janin, 2021)[17]. We explore this further in the article *"Fiduciary duty: More than just financials"* Many initiatives have grown, bringing together bankers and investors (like the Climate Finance Leadership Initiative / Climate Action 100+ and Principles for Responsible Banking) for joint action such as engagement or divestment campaigns (Brière, Pouget and Ureche-Rangau, 2019; Dimson, Karakas and Li, 2020)[18]. Finally, individual investor's appetite for responsible investments has also increased considerably (Eurosif, 2020; Brière and Ramelli, 2021a)[19].

Despite the growing importance of green finance for both investors and policy makers, our collective understanding of the influence of **environmental concerns on financial markets and corporate decisions** remains limited. Several theoretical works indicate that investors' environmental preferences can affect asset prices and, in turn, corporate behaviour (e.g. Pastor, Stambaugh, and Taylor, 2020)[20]. However, from an empirical perspective, identifying and studying the real impact of investors' environmental preferences is challenging for at least two reasons. First, changes in these environmental preferences are not easily observable and measurable. Second, it is difficult to disentangle a change in environmental preferences from a change in expectations about firms' fundamentals (cash flows and uncertainties), which are obviously also influenced by environment-related factors related, for instance, to regulatory risks.

In theory, a shift in investors' appetite for green assets can have several consequences. On one hand, it can **modify investors' appreciation of climate risks**, e.g. the way in which they incorporate fundamental climate information into asset prices. On the other hand, **it can also modify the preferences for different types of available assets, such as "green" and "brown".** Identifying these two components and their impact on prices is difficult because the two effects potentially have an impact on asset valuations. When we observe an increase in the price of green assets relative to conventional assets, we do not know whether this is related to the incorporation of fundamental information or to a change in investor preference.

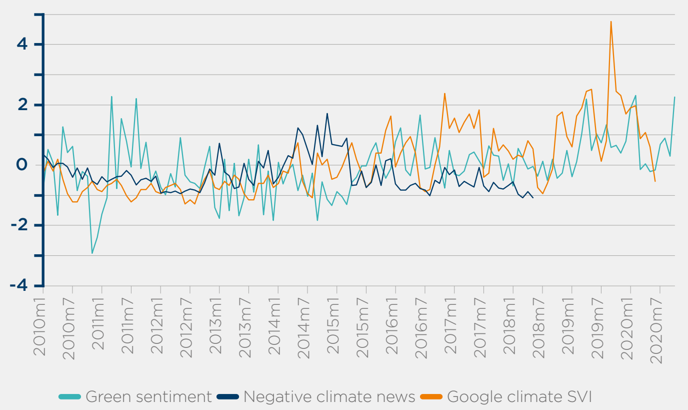
Our research (Brière and Ramelli, 2021b)[21] proposes a novel way to estimate the changes in investors' preferences for green assets that is not related to fundamental information, and to measure their impact on long-term equity returns. To do this, we evaluated arbitrage activity on the climate ETF market i.e. the creation and redemption of shares in the ETF primary markets, which leads to observable flows in or out of ETFs that previous works show to reflect non-fundamental information (Ben-David, Franzoni, and Moussawi, 2017; Brown, Davies, and Ringgenberg, 2020)[22]. Using data on a comprehensive sample of US equity ETFs from January 2010 through June 2020, we estimate the differential flows into green ETFs relative to flows into conventional ETFs for each month, net of the effects of other fund characteristics. We use the **estimated abnormal flows into green ETFs to build a Green Sentiment Index, measuring the changes in investor appetite for this theme**, which are not yet incorporated in the value of the underlying securities that make up these ETFs. The underlying mechanism is as follows: while fundamental demand shocks are expected to affect the price of the ETF and the underlying assets equally, non-fundamental demand shocks can impact the two prices differently. This may be because the ETF market is more sensitive to the shock than the underlying assets or because it is subject to a greater shock. In either case, this non-fundamental demand shock drives the price of the ETF away from the underlying assets prices and leads to an ETF premium (Brown, Davies, Ringgenberg, 2020)[23]. The Authorized Participants will then buy (or sell) ETF shares to

17. Barberis, J.J., M. Brière et S. Janin (2021), "Crise de la Covid-19 et transformation ESG de la gestion d'actifs, numéro spécial Revue Risques – Revue d'Economie Financière.
18. Brière, M., S. Pouget and L. Ureche-Rangau (2019), "Do Universal Owners Vote to Curb Externalities: An Empirical Analysis of Shareholder Meetings", Amundi Working Paper N°90-2019. Dimson, E., O. Karakaş, and X. Li (2020). "Coordinated engagements." Available at SSRN 3209072.
19. Eurosif, 2020, Eurosif market study, Available at http://www.eurosif.org. Brière, M. and S. Ramelli (2021a), "Responsible Investing and Stock Allocation", Amundi Working Paper n°104.
20. Pástor, L., R.F. Stambaugh, and L.A. Taylor (2020), "Sustainable investing in equilibrium", Journal of Financial Economics, forthcoming.
21. Brière, M. and S. Ramelli (2021b), "Green Sentiment", Amundi Working Paper, forthcoming.
22. Ben-David, I., F. Franzoni, and R. Moussawi (2019), "Do ETFs increase volatility?", The Journal of Finance 73, 2471--2535. Brown, D.C., S. Davies, and M. Ringgenberg (2020). "ETF arbitrage, non-fundamental demand, and return predictability." Review of Finance, forthcoming.
23. Brown, D.C., S. Davies, and M. Ringgenberg (2020). "ETF arbitrage, non-fundamental demand, and return predictability." Review of Finance, forthcoming.

correct the mispricing, generating observable flows in the ETFs. By measuring the difference between these arbitrage flows on green and conventional ETFs, we can thus obtain an estimate of the non-fundamental demand for green assets.

We show that our **green sentiment index differs significantly from other proxies of attention to climate change**, such as the Google search activity on "Climate change" and the news-based climate risk indexes adopted by Engle, Giglio, Kelly, Lee, and Stroebel, 2020 (see Figure 1)[24]. These measures are likely to reflect an undefined mix of both fundamental and non-fundamental information related to climate and environmental issues.

Figure 1: Evolution of the Green Sentiment Index



This graph plots the evolution of our green sentiment index, the negative climate news index proposed by Engle et al. (2020), and the Google search volume index for the topic "climate change" in the US (Google climate SVI), all standardized.

Source: Brière and Ramelli (2021b)[25].

Our work shows that a green sentiment that is one-standard-deviation higher is associated with **an outperformance of the more environmentally responsible firm of approximately 30 basis points over a one-month horizon and 60 basis points over a six-month horizon**, net of the effects of other firm characteristics and sector. This impact has the same order of magnitude as the impact of fundamental climate news. Additionally, we find that in quarters with a higher green sentiment, environmentally responsible firms are also able to profit from this new funding, by **increasing their capital investment and their cash holdings.** A one-standard-deviation higher green sentiment is associated with 0.21% higher capex and 0.27% higher cash holdings (representing a 5% and 3% relative increase) for the more environmentally responsible firms. The "real impact" of green sentiment is, however, heterogeneous across firms on the basis of their access to credit, as proxied by their credit rating. In particular, the influence of green sentiment on capex is focused on low (ie non-investment grade) and medium-rated firms (BBB, BBB+, and BBB-, based on the S&P scale).

Changes in **investor preferences for green assets have a significant impact on prices and long-term returns.** They can shift investments from "brown" to "green" companies, which affects the cost of capital of these firms and, in turn, affects their investment decisions, in a potentially virtuous circle. The market for "green" assets is booming, and is arguably not in equilibrium today. In a world where investor preferences are likely to remain heterogeneous, a key question is towards what new equilibrium is it heading?

24. Engle, R.F., S Giglio, B Kelly, H Lee, J Ströbel (2020), "Hedging climate change news." The Review of Financial Studies 33.3, p. 1184-1216.
25. Brière, M. and S. Ramelli (2021b), "Green Sentiment", Amundi Working Paper, forthcoming

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Fiduciary duty: More than just financials

How are regulators driving the move to more responsible investing? Pension funds are increasingly being asked by regulators to integrate ESG considerations into their investment decision-making. This seems to be based on the realization that accounting for all kinds of risks – including climate change and social risks – is a crucial part of pension funds' fiduciary duty, given their long-term investment horizon. Regulators have already implemented measures, notably in the U.K. and Europe, demonstrating their intention to integrate this fundamental evolution of the concept of fiduciary duty. It can be expected that, with COP 26 coming along, regulators and governments in other regions and countries will also start requesting that pension funds play their part in the "Race to Net Zero".

1. United Kingdom

The UK aims to become the first major economy where all pension schemes report on the financial risks of climate change in relation to their portfolios. The government seeks to apply new climate-risk reporting standards under the Pension Schemes Bill, which will be discussed in Parliament in the next few months. Schemes with more than £5bn in assets will need to apply effective governance, strategy, risk management and accompanying metrics and targets focused on climate risk by October 2021. This will be extended to schemes with more than £1bn one year later, while smaller pension schemes could expect similar requirements to extend to them as soon as 2024[26].

Specifically, the proposal includes new requirements for larger schemes and master trusts to align their governance processes and disclosures with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations. The UK is a very active market in this domain, with several large pension funds having already committed to Net Zero objectives by 2050: most notably NEST and the USS.

2. Europe

At a European level, the IORP II Directive has laid the groundwork for the integration of long-term ESG considerations into pension funds' operations. The Directive, which entered into force in 2017, makes it mandatory for pension funds to include the assessment and reporting of ESG and climate change-related risks into investment decisions[27]. However, most Member States are still in the process of implementing it at the local level.

The Sustainable Finance Disclosure Regulation (SFDR) has also started imposing major new ESG disclosure requirements on financial market participants - including pension funds - and financial advisers, beginning in March 2021[28]. SFDR is supposed to complement IORP II in terms of ESG integration and disclosure.

Additionally, within the recent communication on its "Strategy for Financing the Transition to a Sustainable Economy", the European Commission has highlighted the importance of aligning the financial flows from the 125 000 pension funds in the EU with the European Green Deal objectives, explicitly specifying the intent to broaden the concept of fiduciary duty towards its beneficiaries[29].

3. USA

Under the Trump administration, two rules issued by the U.S. Department of Labor (DOL) in 2020, namely the "Financial Factors in Selecting Plan Investments"[30] and the "Fiduciary Duties Regarding Proxy Voting and Shareholder Rights" rule, explicitly discouraged pension plan fiduciaries from taking ESG risks and opportunities into account in their investment decisions and their discharging of stakeholders' rights.

The Biden administration seems to be setting the stage to reverse these. A non-enforcement policy was issued: the two rules would not be applied and no action would be taken for non-compliance. Additionally, in May 2021, President Biden issued an executive order directing the Secretary of Labor to "consider suspending, revising, or rescinding any rules from the prior administration"[31] that would prevent ESG and climate factors being considered in the investment decisions for workers' pensions. It is expected that, consequently, the DOL will issue new regulations explicitly allowing pension plan fiduciaries to consider ESG factors in investment decisions and in the exercise of proxy voting.

At the States level, regulations differ broadly. At one end, Illinois passed a legislation in 2019 requiring all public institutions to have in place sustainable investment policies and to consider ESG factors in the whole investment decision process[32] while, at the other, Texas prohibits the State's retirement plans from investing in companies who boycott energy companies[33].

26. https://www.esgtoday.com/uk-moves-ahead-with-legislation-mandating-climate-reporting-for-pension-schemes/
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Pension Funding Ratios: under a lucky star?

The acceleration of the vaccination campaigns (especially in Europe), the strength of the recovery, coupled with the gradual end of lockdown measures on both sides of the Atlantic, led market participants to anticipate a marked return of inflation as well as a tightening of Central Bank's monetary policy. "Reflation trades" drove markets in Q1, pushing yields up and steepening curves across the board. In Q2 this gave way to a "carry trade" theme. The upward pressure gradually eased, the curves flattened while premium assets (credit, peripherals) performed well.

On the US 30-year, the inflation peak in May marked a turning point in the trend observed on this part of the curve since mid-2020. Market participants have finally started to price the transitory effect of inflation and thus to reduce term premium. The upward pressure on yield over fears of tapering have also recently been put aside, given the disappointing Labor figures and the importance of these indicators in steering the FED's monetary policy.

In Europe, we have observed a downward trend on the long end of the curves since May. New variant fears and a slowdown in the leading indicators weighed on rates. In addition, the fragmentation between Eurozone countries and a peak in inflation expected in Q4 (perceived as transitory by investors) favoured the upholding of the ECB's accommodative tone (not reducing its purchasing program) rather than suppressing interest rates. The UK market followed a similar pattern. As the epicenter of the COVID delta variant in Europe, its number of cases are rising rapidly while the government remains adamant about fully reopening the economy in July. One counterbalanced the other but the overall effect accelerated lately to a tightening. The Bank of England's Monetary Policy Committee (MPC) minutes proved interesting, while the committee stressed a range of views of its participants, the key message remains that the inflation and growth shock remain transitory.

Risky assets have remained very resilient and continued their Q1 positive trend (albeit in a significant sector rotation), generating healthy returns for pension funds' assets across the board. On the liability side, interest rates have been generally range bound in Q2, consolidating the increase of Q1.

As a consequence, funding ratios continued their upward trend started in Q1, with the funding ratio of UK Defined Benefit pension funds notably increasing from 102% in March to 105.6% in May (PPF data) and the funding ratios of Dutch pension funds from 106.3% in March to 108% in May (DnB data).

	31/12/2018	31/12/2019	31/12/2020	31/03/2021	31/04/2021	31/05/2021	30/06/2021
Netherlands	103.6%	104.3%	100.2%	106.3%	108.3%	108%	
UK	95.7%	99.2%	95.5%	102.0%	103.1%	105.59%	
US	86.10%	86.80%	87.90%	91.60%	92.9%	92.5%	92.4%
German CTA	67.3%	67.9%	69.1%	73.5%			73.5%

Sources:
- UK data: Purple Book, PPF S179 funded status, for 31/12/18 until 31/05/21
- Netherlands data: Dnb for 31/12/18 until 31/05/21
- German CTA data: FactSet, based on average pension exposure of German corporates of EUROSTOXX 600 for 31/12/16 until 30/12/20. Amundi estimate from 31/03/21.
- US data: Aon Pension Risk Tracker as 30/06/21

CROSS ASSET Investment Strategy

CENTRAL & ALTERNATIVE SCENARIOS (12 TO 18 MONTHS HORIZON)

Monthly update

On the back of our quarterly updates, we have reviewed the narrative and the probabilities of our central and alternative scenarios. In our central scenario, the policy mix and improving fundamentals support the recovery and markets. Beyond 18 months, we expect US growth to revert to potential amid a higher inflation regime, while stagflationary pressures rise, in particular across Europe. As valuations are stretched and economic momentum is fading, the expected risk-adjusted return of equities is diminishing. We now consider vaccine-resistant virus variants or vaccination-related issues as a risk to the central scenario.

DOWNSIDE SCENARIO 25%

Slumpflation

Analysis

- ❁ Recovery undermined by pandemic-related constraints, despite successful vaccination campaigns
- ✦ Growth in Advanced Economies (AEs) back at (or below) potential, despite fiscal support
- ✦ Persistent inflationary pressures due to prolonged supply-chain bottlenecks
- ✦ Faster than expected slowdown in China impacting AEs
- ▲ Economic and financial fragilities exacerbated by tighter financial conditions
- ⬢ Falling medium-term growth expectations and higher interest rates undermine public debt sustainability and limit fiscal support
- ● Protectionism and de-globalisation, affecting trade and value chains
- ● Stagflationary pressures exacerbated by deleveraging and bottlenecks

Market implications

- Favour cash, USD and US Treasuries
- Play minimum-volatility strategies
- Gold

CENTRAL SCENARIO 60%

Multi-speed recovery

Analysis

- ❁ Strong but uneven multi-speed recovery in 2022 followed by a slowdown in 2023
- ◉ Supportive policy mix allowing debt to GDP ratios to stabilise
- ◉ AEs monetary policies to normalise gradually starting with the Fed
- ✦ Narrower growth premium gap between EMs and AEs (US policy boosters and China's deceleration)
- ✦ US growth and inflation peaked in Q2 and then normalise; EZ growth and inflation to peak in H2
- ▲ NGEU execution is diluted, despite political commitment
- ⬢ Lower solvency risk thanks to positive corporate earnings momentum, active deleveraging and low funding costs
- ♣ Income and wealth inequalities increase social and political tensions

Market implications

- Lower risk-adjusted expected returns due to high valuations and decelerating growth
- Contained steepening of US Treasuries yield curve spills over into EZ and EM.
- Favour equity value and cyclicals
- Inflation hedge via gold, linkers and equities
- Favour barbell positioning in the currencies space
- EM: Short-term caution, long-term income and growth story intact

UPSIDE SCENARIO 15%

Sustainable & inclusive recovery

Analysis

- ❁ Mass vaccinations enables a full global recovery
- ✦ Closing gap between manufacturing and service sectors
- ✦ Consumption strength driven by savings and increased disposable income
- ▲ The Fed stays on hold despite the US job market recovery and wage pressures
- ▲ NGEU implementation is a success
- ⬢ Virtuous circle of growth and inflation without global overheating
- ♣ Inclusive and sustainable recovery
- ● Higher potential growth thanks to productivity gains driven by digital and green developments

Market implications

- US Treasuries curves bear steepen
- Favour risky assets with cyclical and value exposure
- Favour linkers as an inflation hedge

❁ Covid-19 related topics
✦ Growth and inflation expectations
◉ Monetary and fiscal policy
▲ Recovery plans or financial conditions
⬢ Solvency of private and public issuers
● Economic or financial regime
♣ Social or climate related topics

CROSS ASSET Investment Strategy

AMUNDI ASSET CLASS VIEWS

	Asset Class	View	1M change	Rationale
EQUITY PLATFORM	US	=		President Biden's spending plans, coupled with continued vaccinations and reopenings, should support consumer spending in goods as well services sectors. However, government payments ending in some states, potential tax hikes and inflation resulting from supply shortages could act as a dampener. In this environment, we remain selective and look for companies that have the pricing power to pass on the increase in input prices to consumers to preserve margins.
EQUITY PLATFORM	US value	+		We remain constructive on value (particularly high quality), cyclical stocks and realise that as economic data comes more in line with forecasts, the onus of outperformance shifts from market selection (beta) to security selection. These rotations will remain a long-term trend, supported by rising inflation, a mild increase in bond yields and strong economic growth.
EQUITY PLATFORM	US growth	-		We remain defensive on hyper growth/speculative growth segments which are already moving away from the excessive exuberance displayed earlier. As interest rate and inflation expectations increase further, this trend may continue.
EQUITY PLATFORM	Europe	=		Strong economic growth and accommodative policy (ECB and Next Gen EU plan) supports our view of a cyclical recovery that should benefit the region. However, lot of the good news is priced into the markets already and we prefer to focus on relative value and to be selective amid inflation pressures that could potentially affect margins for some companies. Interestingly, ESG, investor activism and minority shareholder rights remain key themes in the markets and for us.
EQUITY PLATFORM	Japan	=		Relative earnings trend suffered recently due to strong earnings in the US and Europe but, in the long term, global cyclical recovery and prospects of a weakening yen should be supportive for Japanese markets.
EQUITY PLATFORM	Emerging markets	=/+		The region is displaying a revival of growth and earnings, and attractive valuations, but the need to be selective and focus on value/cyclical areas is high. We see some headwinds from geopolitical risks and the speed of increase in US rates and inflation.
FIXED INCOME PLATFORM	US govies	-		We are cautious towards USTs in light of our view of persistent inflation, an environment of rising yields and massive fiscal deficit. Markets seems to have bought the Fed's narrative of temporary inflation that prevented any hike in yields for the time being but we believe the general direction of rates would be upwards (non-linear). This will be negative for duration. We prefer Treasury inflation-protected securities.
FIXED INCOME PLATFORM	US IG corporate	=		Investors should limit duration times spread (beta) and long-duration risk in portfolios as an increase in core yields going forward could affect credit prices. However, we like short-duration debt and prefer idiosyncratic opportunities to add value. In securitised credit, we are valuation-conscious as we think most of the sector has recovered.
FIXED INCOME PLATFORM	US HY corporate	=		Carry in HY remains attractive amid improving economy and fundamentals, and the opportunity to refinance debt at low yields. However, we remain very selective so as to balance quality with the potential for higher returns.
FIXED INCOME PLATFORM	European govies	-/=		We stay cautious on core Euro bonds as we believe that an improving economy (in light of the Next Gen EU plan), reopenings and inflation pressures could result in an upward move in yields. However, we acknowledge the continued conviction of ECB to maintain policy support and easy financial conditions that should prevent any quick increase in yields. This ECB support would also help the region avoid fragmentation, thereby supporting Euro peripheral debt.
FIXED INCOME PLATFORM	Euro IG corporate	=/+		We keep our beta stable but do so through high-quality names and are encouraged by ECB support, which provides a strong technical backdrop, especially in light of improving fundamentals. We prefer BBBs and short duration debt and cyclical sectors such as financials (subordinated debt) energy and auto. However, we think investors should rebalance away from senior financial debt.
FIXED INCOME PLATFORM	Euro HY corporate	=		Earnings recovery, deleveraging and debt refinancing at low yields are all factors that allow us to explore low-rated names but we maintain a balance among quality, yield and liquidity. We avoid names where an increase in core yield could affect prices substantially.
FIXED INCOME PLATFORM	EM bonds HC	=/+		We are slightly constructive on HC in the short term but acknowledge that there is very limited scope for spread compression in the medium term. We maintain our preference for HY over IG in corporate as well sovereign space as HY offers higher carry and could benefit from reflationary dynamics, but selection remains crucial.
FIXED INCOME PLATFORM	EM bonds LC	=		We are particularly cautious on rates but in FX we favour higher carry stories while being mindful of liquidity. We have a more positive view for the second half of the year despite expectations of USD getting stronger, but remain selective.
OTHER	Commodities			Economic recovery is positive for commodity prices in general. But it should be noted that current supply shortages of base metals are a result of stoppages in projects over the past few years due to sluggish demand in the past. These are more pronounced in commodities (copper) linked with the green transition. However, by year-end this should ease. Similarly oil supply should ease when issues related to Iran sanctions are resolved. We maintain our 12-month target of $65/b for WTI.
OTHER	Currencies			Monetary tightening and fiscal loosening should support USD (rates and economic growth advantage). We expect a stronger dollar – our EUR/USD target for year end is 1.17 and by Q1 2022 is 1.16. When real rates rise (remaining negative though) and inflation expectations move lower, the USD should strengthen against both low and high yielding FXs.

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Negative view | Neutral | Positive view

▼ Downgrade vs previous mont
▲ Upgraded vs previous month

Source: Amundi, as of 22 May 2021, views relative to a EUR-based investor. This material represents an assessment of the market environment at a specific time and is not intended to be a forecast of future events or a guarantee of future results. This information should not be relied upon by the reader as research, investment advice or a recommendation regarding any fund or any security in particular. This information is strictly for illustrative and educational purposes and is subject to change. This information does not represent the actual current, past or future asset allocation or portfolio of any Amundi product.

IG = investment grade corporate bonds, HY = high yield corporate; EM bonds HC/LC = EM bonds hard currency/local currency. WTI = West Texas Intermediate. QE = quantitative easing.

Shifts & Narratives

Research Papers

The Day After provided readers with some much-needed perspective following the Covid-19 shock.

One year later, this editorial line further explores the impact of the Covid-19 crisis on society, economy and financial markets, trying to detect signs of possible regime shifts and the narratives that can guide investors.

Read the paper online

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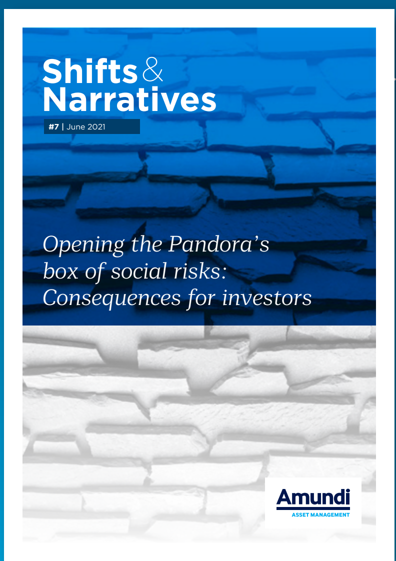

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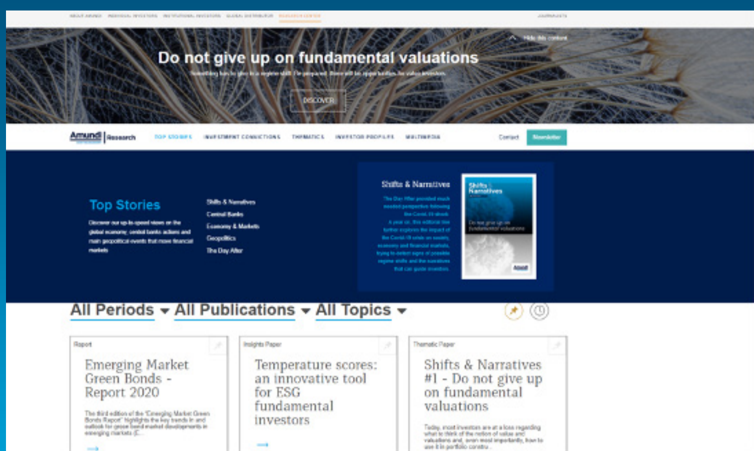

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Research Center

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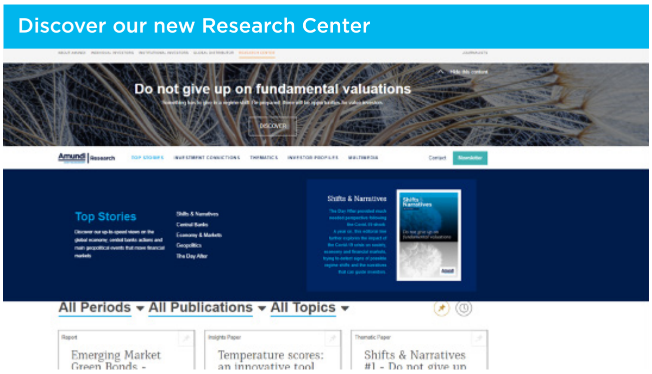

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