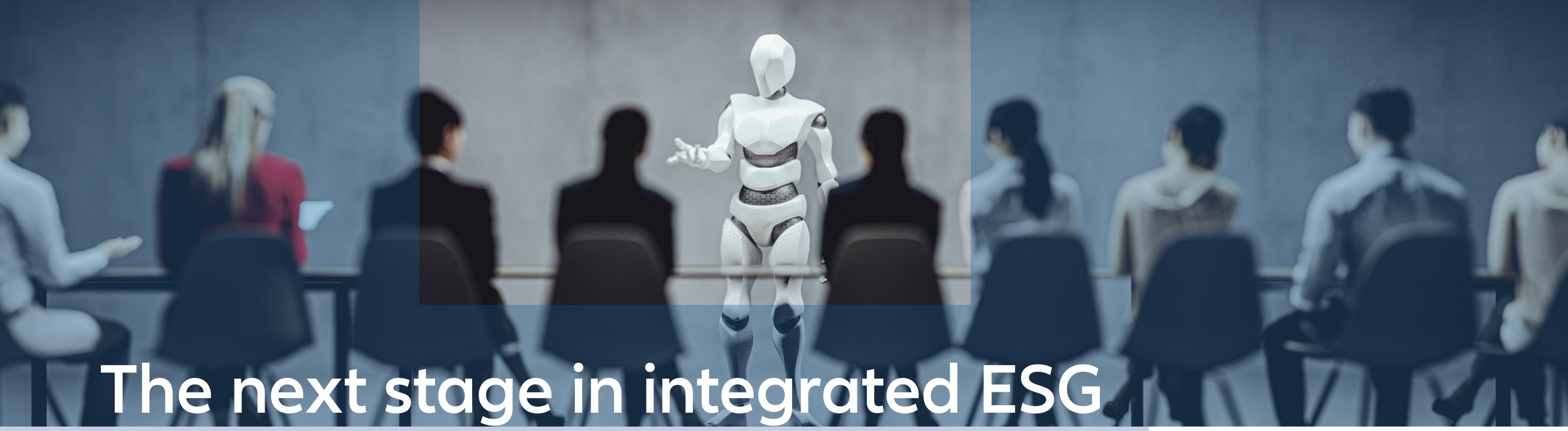


The next stage in integrated ESG investing – a Natural Language Processing (NLP) tool

allianzgi.com

For fund distributors and institutional investors

AllianzGI Emerging Markets Debt

SEPTEMBER 2020

Summary

– Over time, consistently integrating ESG[1] factors alongside traditional macroeconomic metrics has been implemented to support alpha generation in EMD. This year's market developments have shown this once more.

– A recent evolution of our ESG framework deploys a new AI-driven Natural Language Processing tool which is designed to produce a higher-frequency investment signal to assess a country's path towards an environmentally sustainable growth path.

– Post Covid19, investors will be increasingly compelled to pursue an active ESG-focused strategy, where innovation and sovereign engagement seek to bring together sustainability and financial returns.

This year's Emerging Markets debt (EMD) performance has shown once more how integrating ESG factors alongside traditional macroeconomic metrics can be a better way to assess EM creditworthiness. Giving consideration to a government's performance on long-term issues related to Environment, Social and Governance factors can help an investor assess the relative preparedness of an EM economy to weather a storm like the Covid19 pandemic as well as set off on the path to a sustainable economic recovery. In the second part we share recent developments towards an innovative way to expand our ESG framework, by using a new AI tool that can produce a higher-frequency investment signal to assess a country's path towards an environmentally sustainable growth path.

Updating our ESG Framework

Our proprietary ESG framework assesses over 90 investable EMs and helps us identify the ESG standing and direction of travel of these economies to pin down opportunities and challenges. This is achieved by identifying a selection of 20 indicators of Environmental, Social and Governance performance that capture key development issues aligned with the Sustainable Development Goals (SDGs). The overall ESG score is computed as a weighted average of the three pillars' scores, giving a 20% weight to the Environment pillar score; 30% to the Social pillar score; and 50% to the Governance pillar score (Fig. 1). The weights are in place since we believe that governance factors have the greatest potential impact on a country's ability to meet strong environmental standards or achieve social outcomes. This fully integrated ESG approach is applied across all our traditional EM Strategies. It allows us to quantify and assess a myriad of factors, which generally go uncaptured by standard macroeconomic fundamental analysis, and goes to complement the latter. Additionally, for our Sustainable and Responsible Investing (SRI) portfolios, we apply a minimum-threshold system to exclude the bottom performers in each ESG pillar from the list of investable EM sovereigns.

Over time, consistently applying this framework has supported our goal of alpha generation by, for example, holding zero exposure to a certain Middle Eastern country's USD-denominated bonds in our portfolios, when the country announced it would be defaulting on its obligations.

[1] Environment, Social and Governance.

Value. Shared.

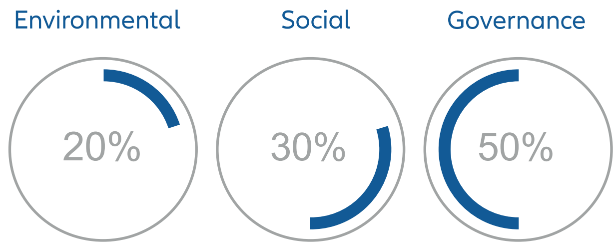
Allianz Global Investors

Going forward, we believe that successfully navigating EMD will require actively pursuing an investment strategy that aims to identify issuers on improving ESG-trajectories and avoiding poor ESG performers while attempting to capture alpha opportunities and meet financial returns targets. As the crisis exposes economies' vulnerabilities, it will be even more important to assess their ability to weather new challenges and stay the course towards attaining the SDGs.

... strongest improvements in Least Developed Countries

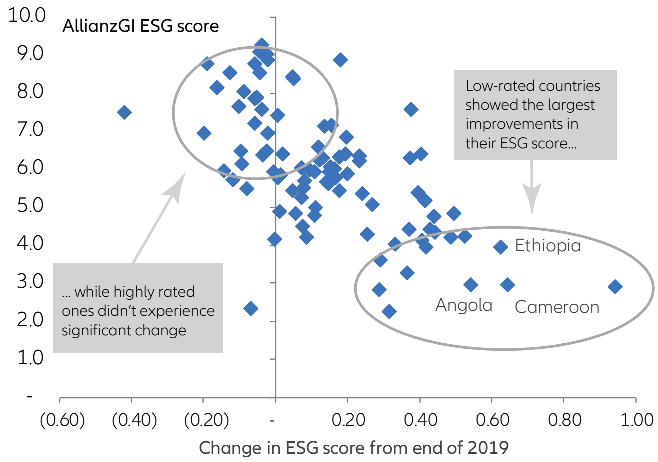
ESG factors for EM sovereigns tend to be long-term drivers of performance and evolve relatively slowly, but our mid-year update still highlights some notable developments. Our ESG framework shows countries' performance relative to each other. In our latest update, it is encouraging to see that the largest relative improvements occurred predominantly in low-rated countries, while declines in scores were quite small and concentrated amongst the highest rated countries (Fig. 2).

Figure 1: **ESG framework**



Source: Allianz Global Investors, 2020

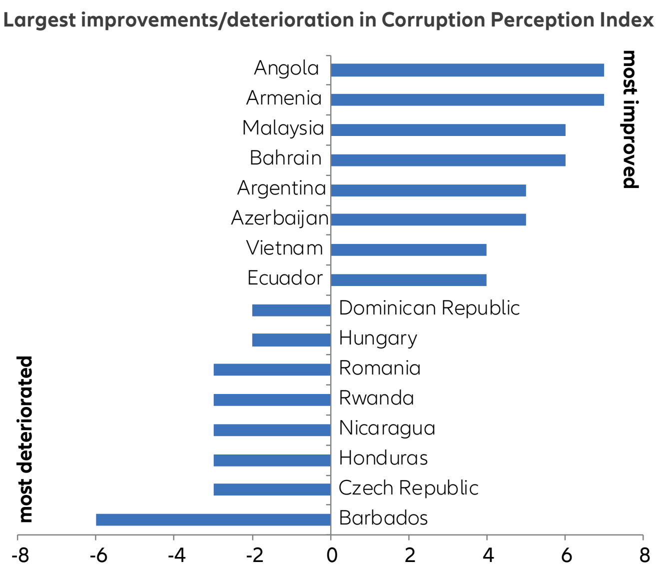
Figure 2: **Changes in ESG score highlight some broad catching up**



Source: Allianz Global Investors, 2020. Changes for the scores of all countries is available upon request.

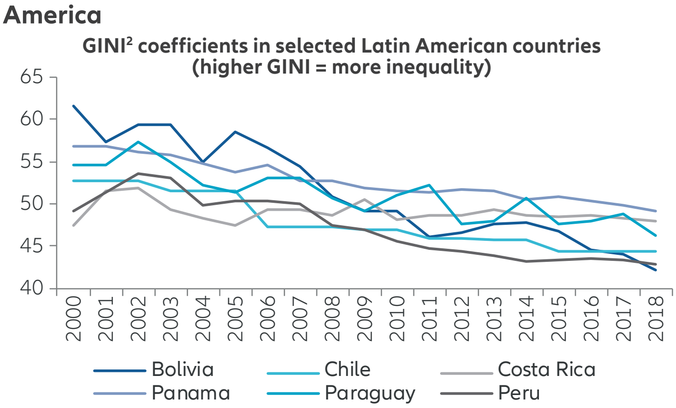
This trend suggests that some catching up is happening amongst the Least Developed Countries. For instance, Cameroon's ESG score remains very low (3 / 10) but the country saw an improvement across a number of environmental and social indicators since our last update (December 2019). It also experienced one of the largest improvements in fiscal transparency recorded by the Open Budget Index. In Ethiopia, despite recent bouts of civil strife and ongoing social and governance challenges, the country recorded the largest ESG score improvements amongst EM compared to our previous update, thanks to a pick-up in civil liberties and political rights outcomes as measured by the Freedom House Index. Press freedom and corruption perceptions also appear to be on an improving trend. Similarly, Angola was amongst the top five ESG score improvers (+0.5 to 3), thanks notably to the largest reduction in corruption perceptions out of all the countries in our framework (Fig. 3). After three years at the helm, President Lourenco is reportedly making in-roads in tackling corruption within the ruling party, amongst previous and current high-ranking personalities. While all three sovereigns do not meet the minimum ESG score to be included in our SRI portfolios, in our traditional EMD strategies, integrating ESG scores and analysis has led us to support Angola's positive direction of travel with a portfolio allocation.

Figure 3: **A few countries making headway in combating corruption**



Source: Transparency International, AllianzGI. Change from end of 2019 to June 2020.

Figure 4: **Progress in lowering income inequalities in Latin America**



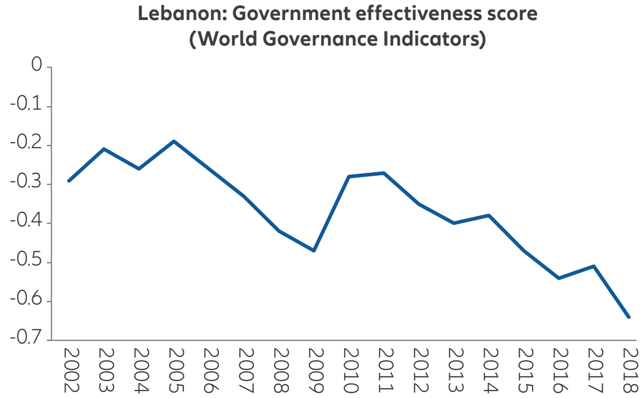
Source: World Bank, AllianzGI, 2020.

[2] the Gini coefficient is a measure of statistical dispersion intended to represent the income inequality or wealth inequality within a nation.

A more encouraging trend is the continued decline in income inequality in Latin American countries (Fig. 4). The region still stands out for having some of the highest income inequalities in the world – a key trigger behind last year's large-scale popular protests in many Latin American countries (e.g. Chile, Ecuador, Colombia, etc.) – but, albeit from a low base, some noteworthy policy progress is being recorded on this front. It will be important to monitor how the Covid19 crisis impacts such slow-but-notable progress and whether this leads to a higher risk of social unrest picking up again. Once again, engagement with sovereign policymakers will likely prove an enabler to sustained progress towards the SDGs in the post-Covid19 environment.

Recent events in Lebanon also tragically demonstrate how long-term underlying ESG issues can very suddenly come to the surface and become key drivers of credit performance. While a full investigation into the direct responsibilities for stocking a large amount of explosive material at the port of Beirut is still pending, widespread corruption and low government effectiveness (Fig. 5) are pointed at as key shortfalls in this disaster that has hit the heart of the Lebanese economy and large swaths of its population. This follows a long period of popular protests that began in 4Q2019 against the government. On top of the human tragedy, the event will probably make a debt restructuring agreement much harder to reach. We remain hopeful that the international community will deliver much needed aid to the country. Bondholders should also provide substantial debt relief contingent on a set of long-term structural reforms, including anti-corruption measures and initiatives to improve transparency.

Figure 5: **Deterioration in Lebanon's key ESG factors**



Source: World Bank, AllianzGI, 2020. The information above is being provided for illustrative purposes only as a recent example of a well known event which has notable ESG consequences. Any reference to securities and their issues are examples of securities which may or may not be held in an AllianzGI portfolio and not intended to be, and should not be interpreted as an offer, solicitation or recommendation to purchase or sell any financial instrument, an indication that the purchase of such securities was or will be profitable, or representative of the composition or performance of a portfolio. See additional disclosure at the end of this presentation.

All these trends reinforce the importance of integrating ESG factors into traditional EM macroeconomic and political risk analysis in order to capture alpha opportunities. In addition, sovereign engagement will become an even more critical avenue for asset managers to play a role in supporting countries' economic recovery. Active engagement with sovereign issuers will also provide asset managers with a platform to carry our more effective due diligence on portfolio positions and meet their fiduciary duty to their clients. This, alongside product innovation, will be key areas of focus for any ESG-minded EM debt investor, going forward. We believe that demand for sustainable financial products should rise as Covid19 refocuses people's attention on the much-needed switch to set the world economy on a more sustainable path, especially in the context of supporting them in their quest to meet the 2030 Paris Agreement and United Nations Sustainable Development Goals (SDGs). Also, we believe that growing investment instruments in the sustainability space, such as Green, Social and SDG-linked Bonds, and innovative approaches incorporating artificial intelligence to ESG assessment will be key feature of the future of a more sustainable approach to investing.

Leveraging the power of AI for sustainability

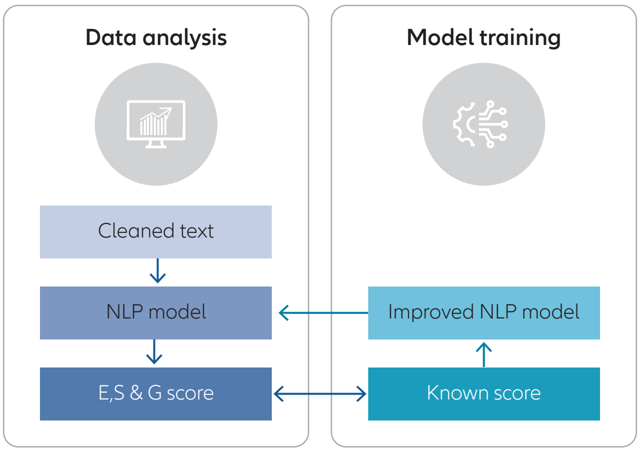
As digitization becomes the next stage of innovation across asset classes, we look for it to bridge key gaps in the current ESG EMD investing field. Deploying the power of Artificial Intelligence (AI) via a trained Natural Language Processing (NLP) modeling approach to EMD ESG investing can support our qualitative ESG assessments and enhances our proprietary EMD ESG Framework (above), thereby helping us better integrate ESG considerations in EMD investment decisions. Going forward, this innovative NLP approach - developed under the technical leadership of our Systematic Strategies Team[3] – can help us bridge an "information gap", by expanding the set of available ESG data; a "standardization gap", by bypassing the problem of different approaches and standards adopted by third-party ESG data providers; and a "demand gap", by allowing the creation of bespoke investment solutions to meet an investors' unique goals to support any particular aspect of ESG investing (e.g. a customized environmentally focused portfolio, etc.).

This NLP approach to EMD ESG investing can also provide us with a more forward-looking assessment of an issuer's ESG risks and opportunities as well as its "ESG direction of travel", thereby also giving an investor a powerful tool to support sustainable development and the attainment of the SDGs via more focused engagement with borrowers. This can help drive capital to where it is most needed and towards issuers that demonstrate a commitment to improve their ESG standing over time, rather than simply result in a capital re-allocation away from "low-ranking"/higher-risk countries as identified in standard ESG assessment frameworks. Over the long term, the goal is for capital to flow to those countries that need it to make such transition and can thereafter benefit from the resulting in a drop in their borrowing costs. This is because a more sustainable development path influences a sovereign's "capacity to pay" back debt and translates into lower risk for bond holders.

[3] "The next generation alpha model: introducing natural language processing.", by L. Zhao, S. Lee, K. Ghosh, and L. Yu, AllianzGI, 2019. "Fantastic, Amazing...5 stars!". Utilizing natural language processing to bolster active management.", by K. Ghosh, L. Yu, L. Zhao, and B. Michael, AllianzGI, 2019.

Drawing on a much vaster set of information (including daily news, financial filings, public speeches, sustainability reports, regulatory filings, etc.), our NLP approach allows us to effectively quantify textual inputs and develop an Artificial Neural Network with machine learning capabilities (Fig. 6). This leads us to build a model that can disaggregate ESG relevant/irrelevant information segments and analyze the nature (positive/neutral/negative) of its impact on individual E, S and G outcomes in the EM issuers in our universe, while continuously learning beyond explicit programming. This allows us to develop high-frequency and forward-looking investment signals on each of these ESG dimensions. It is applicable to both EM sovereign and corporate issuers. Going forward, it is also expected to allow for higher levels of transparency and detail in portfolio reporting back to the ESG-minded end-investor that aims to stay on top of his/her holdings.

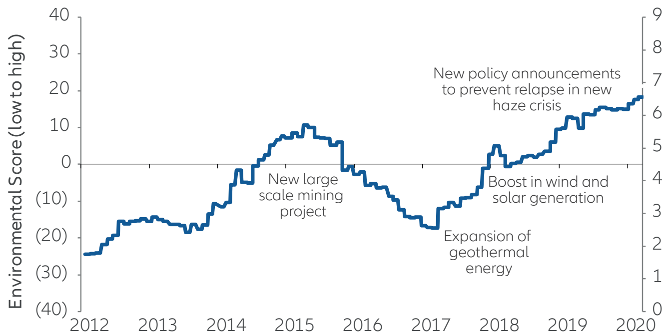
Figure 6: **Pathway to an ESG NPL model**



Source: Allianz Global Investors, 2020.

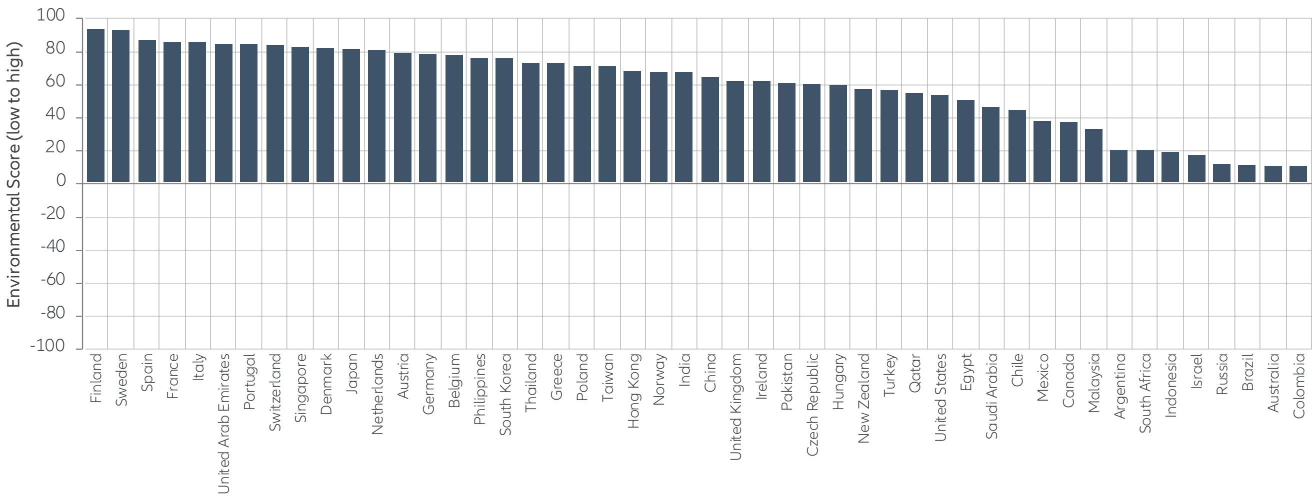
By way of example, we can use the NLP approach to enhance the scoring of the environmental performance of a sovereign and complement the E-pillar scoring in our proprietary Sovereign ESG Framework, which considers natural-capital and transition-risk exposures. The NLP approach pulls and quantifies textual inputs from a variety of relevant sources in both local and foreign languages and trains the model to adequately recognize the type of impact these inputs have on a country's "direction of travel" towards environmental sustainability. In the case of Indonesia (Fig. 7), the country has been on a broadly positive – albeit uneven - direction of travel towards environmental sustainability for the better part of the last three years. This has been driven by positive steps being taken at a government policy level, including to prevent a return to the Southeast Asian Haze Crisis of 2015; and a boost to renewable energy infrastructure building, including wind, solar and geothermal. While much needs to be done to sustain and improve the environmental score of the country (Fig. 8) – which still falls in the third quartile of our EM Environmental ranking – the positive direction of travel bodes well for improved future environmental outcomes, with ensuing implications for portfolio positioning.

Figure 7: **An NLP-driven Environmental scoring**



Source: AllianzGI, 2020.

Figure 8: **An NLP-driven Environmental ranking**



Source: AllianzGI, 2020. Note: subset of full DM and EM sovereign ranking.

More than ever in the aftermath of the Covid19 global pandemic, we believe that investors will be compelled to pursue an active ESG-focused strategy, where innovation and sovereign engagement will help track ESG progress alongside financial returns. Incorporating AI modelling in investment decision making is the next step in sustainable investing. It allows the ESG-focused investor to develop high-frequency E, S, and G investment signals as well as ways to flag areas that merit further investigation to help dodge potential "alpha detractors" and improve investment selection. In the future, leveraging AI to build resilient EMD portfolios will be key in any active investment approach to capture alpha opportunities and avoid pitfalls that investors are all too used in the constantly evolving EMD asset class. As the Covid19 crisis exposes economies' vulnerabilities, it will become even more important to adopt a forward-looking approach to assessing countries' ability to weather new challenges.

Deploying AI coupled with regular and well-informed sovereign engagement will also allow the ESG-minded investor to support countries' transition to a more sustainable growth path. This NLP approach can facilitate investors' engagement with sovereigns by working as a tool to identify an opportunity set to allocate capital to where it is most needed. Finally, complementing this analysis with innovative financing mechanisms - including new types of bonds that promote investment patterns that help build environmental resilience, e.g. Chile's green bond; new SDG-Linked bonds; etc. – would close the circle by becoming an efficient and effective way for investors and development financing institutions to partner in supporting an environmental transition in Emerging Markets.

AUTHORS:

Nicolas Jaquier
EM Strategist

Giulia Pellegrini
EM Portfolio Manager