NOVEMBER 2020

ALLIANCEBERNSTEIN®

MISSING PIECES

A BETTER APPROACH TO SOVEREIGN ESG ANALYSIS

Katrina Butt
Senior Economist—Latin America

Markus Schneider
Senior Economist—EEMEA

IN THIS PAPER: ESG integration has built considerable momentum in recent years, but the case for incorporating ESG in sovereign-credit analysis isn't always clearly articulated. In developing a more rigorous ESG model, we've created a framework that enhances traditional sovereign-credit analysis and provides fresh insights into the drivers of long-run economic performance.

A SHORTFALL IN ESG ANALYSIS

Responsible investing has built considerable momentum in recent years, as investors have recognized that environmental, social and governance (ESG) considerations can help them meet their social responsibility goals and have a meaningful *financial* impact on their investments.

The case for integrating ESG considerations into equity and corporate-credit research is well understood. However, the important role that ESG factors play in driving sovereign-debt performance and broader economic and financial outcomes has not been articulated as clearly.

To address this shortfall, we set out to develop a framework that could measure and monitor sovereign ESG characteristics more effectively. In the process, it became clear that the ESG pillars are more important than we initially thought. Put simply, they capture all the factors likely to determine long-run macroeconomic performance.

> “We set out to develop a framework that could measure and monitor sovereign ESG characteristics more effectively.”

HURDLES IN APPLYING SOVEREIGN ESG ANALYSIS

Before discussing AB's approach to macro and sovereign ESG, it's worth providing a brief description of the conventional approach.

It's widely agreed that incorporating ESG factors helps improve sovereign-credit analysis. But there's a clear pecking order: governance is widely regarded as being the most important factor, followed by social, while environmental considerations receive less attention—though that's starting to change. As a result, sovereign rating agencies and fixed-income managers can rightly claim that they've been applying a primitive version of ESG within their sovereign-credit analysis for many years.

But is this enough, or can we move the needle further? Is there a more robust approach that can enhance traditional sovereign-credit analysis and provide a better assessment of potential financial outcomes? Those are the questions we sought to answer.

ESG PILLARS: THE BUILDING BLOCKS OF GROWTH

In conducting our research, we started with different questions: Why do we need to monitor ESG factors when we already use a wide range of higher-frequency indicators that do much the same job? Wouldn't that be double counting? After all, many social factors are highly correlated with GDP per capita. And strong governance is likely to influence better economic performance, including more sustainable external and fiscal balances.

We quickly resolved this conflict when we realized that ESG isn't an alternative approach to traditional economic or sovereign-credit analysis. Instead, it's actually the foundation upon which long-run economic performance is built. To understand why, we first need to go back to basics and the economic factors of production: natural resources, labor and factors governing the efficiency with which they are used.

The United Nations Principles for Responsible Investment (PRI) laid out a framework mapping economic growth factors to ESG pillars in its 2013 white paper, *Sovereign Bonds: Spotlight on ESG Risks* (*Display 1*).

The environmental pillar is a list of natural resources and, more frequently these days, natural barriers to growth. The social pillar includes factors such as demographics, education and employment—in other words, factors that determine the quantity and quality of labor. And the governance pillar focuses on factors that are likely to determine how efficiently the other two pillars are used.

In short, the ESG pillars contain just about every factor likely to affect a country's longer-term prospects. It would therefore be hugely surprising if ESG scores weren't highly correlated with economic outcomes.

DISPLAY 1: CONNECTING ECONOMIC GROWTH FACTORS TO ESG PILLARS

Environmental	Social	Governance
+ Climate change	+ Human rights	+ Institutional strength
+ Water resources and pollution	+ Education and human capital	+ Corruption
+ Biodiversity	+ Health levels	+ Regime stability
+ Energy resources and management	+ Political freedoms	+ Political rights and civil liberties
+ Biocapacity and ecosystem quality	+ Demographic change	+ Rule of law
+ Air pollution	+ Employment levels	+ Regulatory effectiveness and quality
+ Natural disasters	+ Social exclusion and poverty	+ Accounting standards
+ Natural resources	+ Crime and safety	+ Government finances
	+ Food security	

For illustrative purposes only

Source: Kohut, John, and Beeching, Archie. 2013. "Sovereign Bonds: Spotlight on ESG Risks." United Nations Principles for Responsible Investment Initiative white paper.

Given the long horizons over which ESG factors are likely to play out, they won't necessarily help us predict GDP growth in any given year. Other variables, such as the global business cycle, exchange-rate movements, and monetary and fiscal policy, are likely to carry more weight over shorter horizons. But as the fundamental building blocks of growth, ESG factors act as an anchor for short-term economic performance. Economic cycles come and go; the ESG pillars tether them to a longer trajectory.

AN ANCHOR FOR ABILITY AND WILLINGNESS TO PAY

We can extend this concept to sovereign-credit analysis. Bond investors have traditionally focused on a few well-established indicators to gauge a country's creditworthiness, such as fiscal and external balances and private sector debt. These metrics are still hugely important, but countries don't have high GDP-per-capita ratios or sustainable fiscal and external balances by accident. Ultimately, they reflect more fundamental drivers of a country's ability and willingness to pay—the ESG factors.

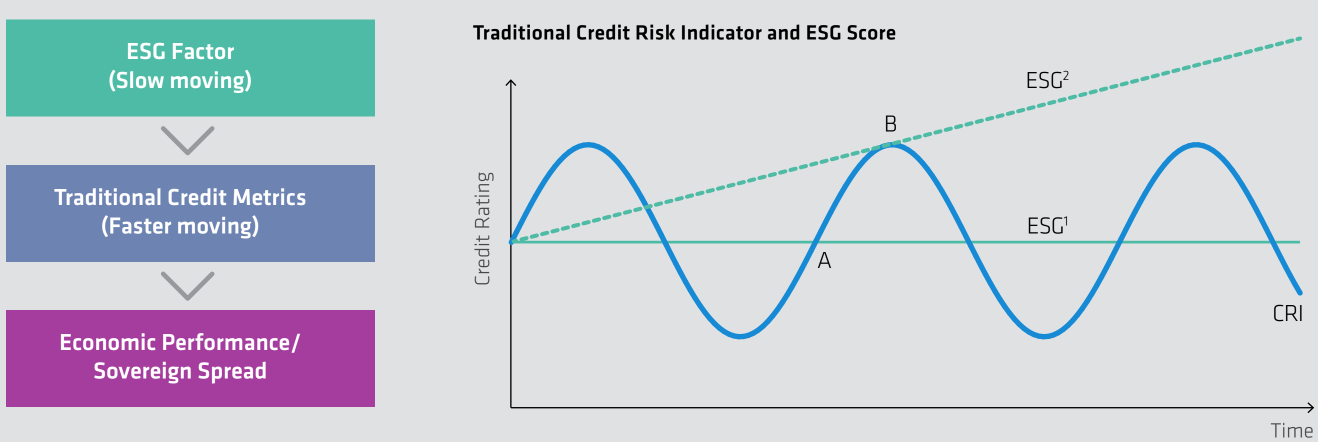
ESG factors also bring something to the table that traditional credit metrics can't: they're less likely to be buffeted by short-term developments such as business-cycle and commodity-price fluctuations. And while short-term fluctuations are important, they can also paint a distorted picture of a country's underlying strength or weakness.

There's a parallel here with the relationship between potential output growth and actual output growth. There may be times when potential growth is slowing but actual growth is rising because of temporary factors that have no lasting impact.

That's a key distinction, and the same is true in the sovereign-credit space. How, for example, should we treat a commodity-exporting country that has made important changes to its social and governance structure that, over time, are likely to markedly improve its ability and willingness to pay, but that also suffers from deteriorating fiscal and external accounts as a result of falling commodity prices?

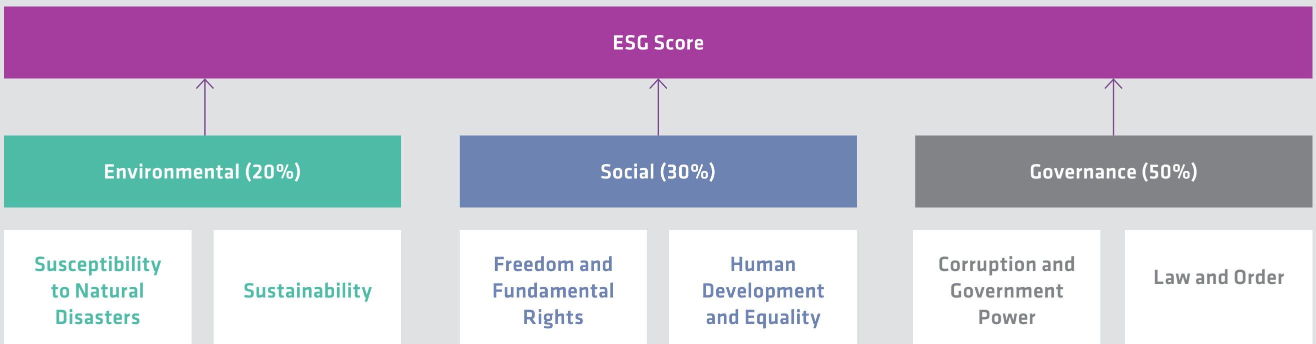
Slow-moving ESG scores and faster-moving credit metrics (*Display 2, left*)—as embodied in our own credit risk indicator (CRI)—can diverge substantially at times. Because of this, it's important to consider both when trying to gauge sovereign creditworthiness (Display 2, right). An investor looking only at the CRI (blue line) at point B can't be sure whether improving fundamentals are being driven by temporary

DISPLAY 2: TWO LENSES—ESG FACTORS AND TRADITIONAL CREDIT METRICS



For illustrative purposes only
Source: AllianceBernstein (AB)

DISPLAY 3: A FRAMEWORK FOR SOVEREIGN ESG SCORING
Structure of AB Proprietary Sovereign ESG Model



For illustrative purposes only
Source: AB

ESG factors or are reflecting a durable improvement in a country's long-run economic prospects (a shift in the teal line from ESG^1 to ESG^2). As market pricing moves, it's vital to understand the difference.

LIVING IN AN ESG WORLD: A CLEAR CASE FOR INTEGRATION

Once we acknowledge that ESG pillars are an alternative way of thinking about the factors of production—natural resources, workers and the efficiency with which they're used—it becomes clear that ESG is the starting point for evaluating economic performance. And if that's the case, it's also clear that ESG should be an integral part of the fixed-income investment process.

There are several levels to this notion.

At the broadest, there are clear parallels between ESG factors and the secular themes that help shape and anchor our shorter-term views on the global macro cycle. Populism and deglobalization are likely to drive sizable changes in country (and aggregate) social and governance scores in coming years, and climate change will also have a profound impact. All of these factors have implications for the secular outlook for growth, inflation and interest rates.

And, as already discussed, social and governance factors play a key role in driving traditional sovereign-credit metrics. A robust framework for monitoring and analyzing ESG developments both within and across countries is therefore vital.

DEVELOPING A SOVEREIGN ESG SCORING FRAMEWORK

So how do we create a comprehensive and repeatable framework?

The first challenge is that some ESG factors are qualitative—it's hard to attach numbers to the strength of institutions or the likelihood of social conflict. But without a standardized, quantitative metric, it's impossible to compare ESG scores across countries and regions and assign risk consistently. That makes it essential to construct a quantitative model to standardize ESG assessments.

In developing our sovereign ESG model, the framework (*Display 3*) needed to match the way we incorporate ESG risks into our macro analysis and to leverage data from specialist providers. Our country ESG scores need to serve as a standardized metric that allows a comparison of trends over time and across the sovereign universe.

The first step was to identify high-level ESG themes that influence economic performance and sovereign-credit risk: sustainability, susceptibility to natural disasters, freedom and fundamental rights, human development and equality, law and order, and corruption and government power. We selected metrics developed by nongovernmental organizations and multilateral institutions that measure key elements of each theme. We then averaged these underlying metrics to create scores for each ESG pillar.

WEIGHTING THE THREE ESG PILLARS

The weights for the ESG pillars are based on how much we think they contribute to long-run economic performance, and those weights are likely to change over time. For now, governance (50%) is the most important factor. That's because the strength of institutions and rule of law shape every aspect of economic life while also dictating the variability, predictability and effectiveness of policy itself.

The social component (30%) feeds into our macro assessment in two ways. First, rising inequality can lead to social unrest and the rollout of populist policies, with adverse economic consequences—in addition to their negative impact on people and societies. Second, greater personal freedom tends to correlate with larger workforces and higher productivity.

Environmental currently has the smallest weight (20%) in our overall sovereign ESG score. That's partly because of the long horizons over which environmental considerations are likely to play out, but it's also because the environment hasn't had a significant economic and financial impact so far. As climate change intensifies and that begins to change, this factor will probably grow in importance.

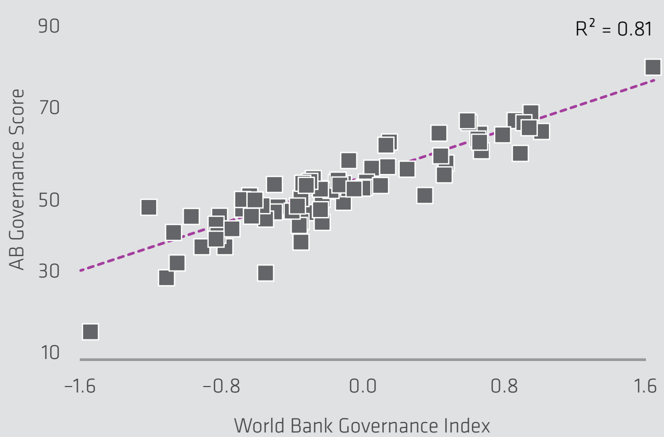
IMPROVING ON ESG PROXIES

With our framework established, we then needed to identify indicators to create scores for each theme. One way of doing this would be to use simple ESG proxies, such as the World Bank's Worldwide Governance Indicators (WGIs) for governance or GDP per capita for the social pillar. But building an effective ESG framework that delivers true insights requires a more robust information set.

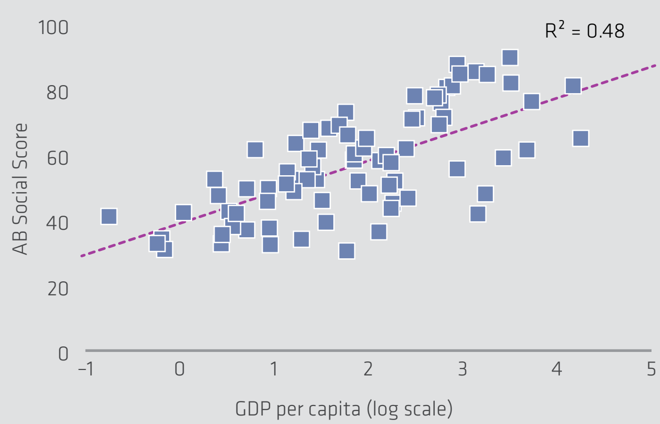
The impact of governance on economic performance is well established. As governments set policy, it's essential for a sovereign analyst to evaluate the strength of government institutions and the ways in which their policies affect outcomes. The WGIs, created in 1996, assess nearly 200 countries on six main governance themes by aggregating data from

DISPLAY 4: COMPARING AB'S "G" AND "S" SCORES TO ESG PROXIES

AB Governance Scores Seem Aligned with Proxies…



…While Social Scores May Reveal a Missing Element



Historical analysis does not guarantee future results.

As of September 30, 2020

Based on proprietary AB ESG scores ranging from 0 to 100, World Bank Governance Index and GDP per Capita

Source: Haver Analytics, World Bank and AB

DISPLAY 5: ENHANCING THE ESG PROXY APPROACH

	Typical ESG Proxies	AB ESG Score
Environmental	None	+ Susceptibility to Natural Disasters + Sustainability
Social	GDP Per Capita	+ Freedom and Fundamental Rights + Human Development and Equality
Governance	World Bank Worldwide Governance Indicators: + Voice and Accountability + Political Stability and Absence of Violence + Government Effectiveness + Regulatory Quality + Rule of Law + Control of Corruption	+ Corruption and Government Power + Law and Order

For illustrative purposes only
Source: AB

over 30 sources. The large universe and long time series make this a useful data source, but the model's cross-sectional structure makes it difficult to dig deeper and understand underlying trends.

Instead of using the WGIs, we therefore constructed our own governance scores from alternative sources in order to obtain full transparency on each factor's weighting and help us to identify variables driving changes in the scores. More importantly, structuring our model as a panel set enabled us to assess trends across countries and time.

How do our model's governance scores stack up against the WGIs?

Historically, the correlation (as measured by the r-squared, or coefficient of determination) is 0.8 (*Display 4, page 4, left*), so our governance scores capture much of the same information as the WGIs. But with more transparency, our model also enables us to explore the underlying data to assess trends and relationships over time. That function isn't available with the WGIs.

The most obvious proxy for the social pillar is GDP per capita, which is often used in simple ESG models. The rationale is that social progress, including greater personal freedom and opportunity, is more advanced in wealthier countries. In contrast to the governance scores, the correlation between our social scores and GDP per capita (Display 4, right) is relatively low, at 0.5. But that's not surprising, given that we base our scores on a broader information set, including key indicators such as inequality, civil liberties and political rights.

While it's possible to identify simple proxies for the social and governance pillars, that's not the case when it comes to the environmental pillar. That's partly because the environment has not, until recently, been seen as a key driver of sovereign risk. The weighting on this pillar is still quite low. But it's still a notable improvement over traditional approaches—which often have no environmental pillar—and enables our framework (*Display 5*) to convey a more comprehensive understanding of a country's ESG position.

ROAD TESTING THE SOVEREIGN ESG MODEL

So, how do our scores differ from those generated by a simple framework using traditional ESG proxies? In some cases, quite markedly.

China provides a good example. Because simple ESG proxies include only high-level governance and social indicators—GDP per capita and the WGI indicators—our China ESG score is similar if we include only the “S” and “G” pillars. But when we include the environmental pillar, which is absent from simple ESG proxy models, there’s a substantial difference. That’s because China’s environmental score is just 30 out of 100, higher than only Bangladesh and India.

The main reasons for China’s weak environmental score? Its geographic location makes it susceptible to climate risks, it derives most of its energy from fossil fuels and, partly because of this, it generates high levels of pollution that have an adverse impact on public welfare. Some of these traits are consistent with countries in the industrialization phase of development, but environmental vulnerabilities can also hurt economic performance via human health concerns and fiscal risks.

The difference between our ESG scores and those derived from simple ESG proxies isn’t due only to the inclusion of an environmental pillar, though. Ghana is a case in point. Because Ghana’s GDP per capita is just $2,220 (less than one-fifth of the global average of $11,429), it scores very poorly using this metric as a proxy for the social pillar. But Ghana grants many freedoms and liberties to its citizens and has a relatively equal wealth distribution. These factors can boost economic performance over time, and our model reflects that distinction with a much higher social score.

IT’S (NOT) ALL RELATIVE: A MODELING ADVANTAGE

A key feature of our model is that it allows us to track aggregate ESG performance through time. Many simple ESG methodologies are designed to assess countries’ ESG profiles relative to each other, rather than measuring them on an *absolute* basis.

That’s an important difference. In a relative model with a 0–100 scoring system, for example, the global average will always be 50. A country with an “average” ESG profile will always receive a score of 50 and countries with better than average profiles will always receive a score above 50 (the reverse is true for countries with below-average profiles). All of this relativity will apply even if all countries’ ESG profiles are on an improving (or deteriorating) trend.

That’s not the case with our model. Because we focus on absolute scores, the aggregate global score moves through time, allowing us to answer vital questions such as “Is inequality increasing globally?” or “Is the world improving in sustainability?” A cross-sectional, relative model is silent on those questions.

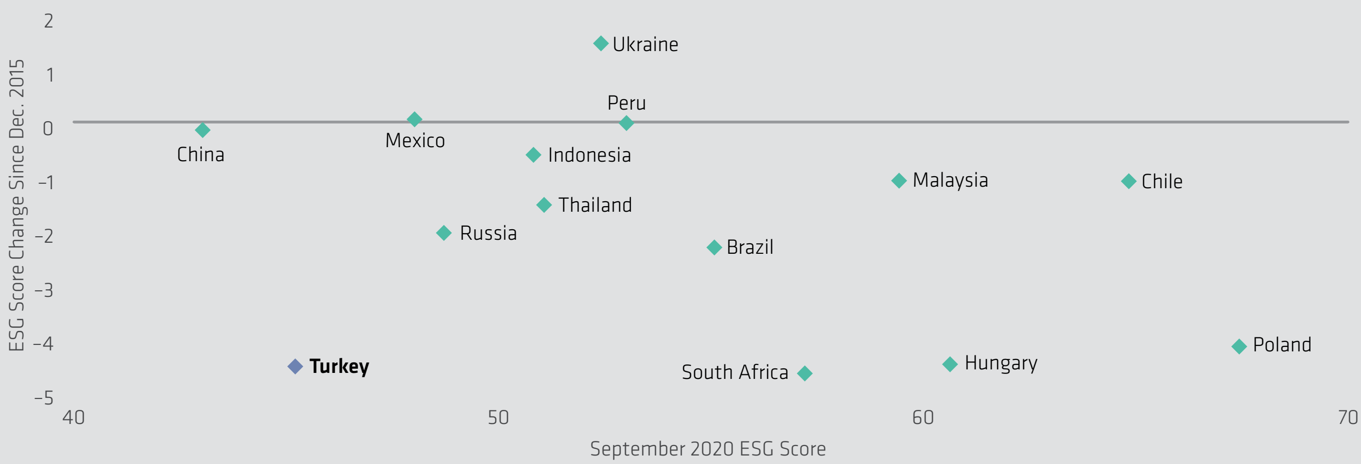
THE REAL VALUE: A FORWARD-LOOKING APPROACH

Building a comprehensive and transparent scoring framework is an important first step toward formally embedding sovereign ESG considerations in the fixed-income investment process. But the real value occurs when our sovereign analysts identify future ESG trends and combine this with traditional macroeconomic and sovereign balance-sheet analysis.

There’s also a symbiotic relationship between ESG and sovereign credit analysis. While our ESG scores provide important insights into economic performance and sovereign creditworthiness, real-time economic and institutional analysis can provide additional insights into current and future ESG trajectories, helping to address any gaps or reporting lags in the underlying data used in our model.

DISPLAY 6: DECLINE IN TURKEY'S ESG SCORE IS ON PAR WITH REGIONAL PEERS

Current AB Sovereign ESG Scores Versus Score Change in Past Five Years



Current analysis does not guarantee future results.
As of September 30, 2020
Based on proprietary AB ESG scores ranging from 0 to 100
Source: AB

Nowhere is this better illustrated than in Turkey.

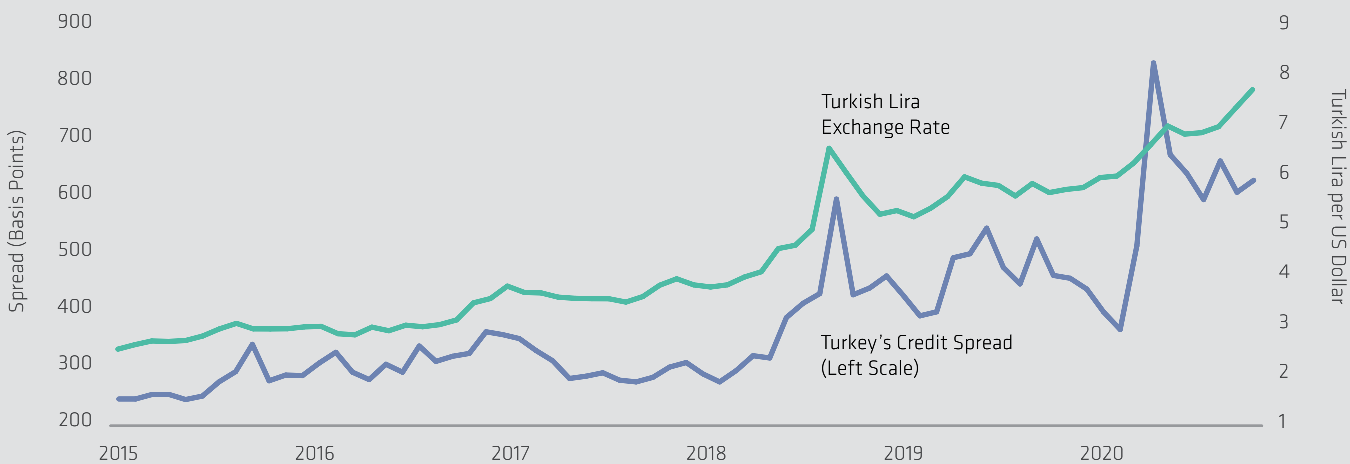
Turkey has faced a number of ESG challenges in recent years, particularly from restrictions on judicial power and civil rights in the aftermath of 2016's attempted coup and a deteriorating domestic security situation. These issues have driven Turkey's social and overall ESG scores lower. Yet Turkey's ESG score doesn't stand out: while it has a lower score than other countries in the region, its rate of deterioration is on par with South Africa, Poland and Hungary (*Display 6*).

Where Turkey stands out more clearly is in the subcomponents of its governance score. Its ratings for "constraints on government power" and "effective regulatory enforcement" have deteriorated markedly in recent years and are now at very low absolute levels. On the ground, this is reflected in government overreach and a weakening of institutions, culminating in the de facto capture of the central bank by the government following the 2018 elections and the implementation of executive presidency.

Recognizing the importance of Turkey's governance score and, particularly, the likelihood of further deterioration enabled us to identify in advance the recent massive underperformance of Turkish asset prices (Display 7, page 8). The spread on external debt rose from 300 basis points (b.p.) at the beginning of 2018 to over 600 b.p. by mid-October 2020 (having been higher than 800 b.p. earlier in the year). At the same time, the Turkish lira depreciated by more than 100%. This is a powerful example of how thorough, forward-looking ESG analysis can help identify investment opportunities and risks in the emerging-market universe.

DISPLAY 7: ASSET PRICES REACT TO TURKEY'S GOVERNANCE DETERIORATION

Turkey's Exchange Rate and Sovereign-Credit Spread



Historical analysis does not guarantee future results.
Through September 30, 2020
Source: Bloomberg

BROADER APPLICATIONS

While the importance of ESG factors is widely accepted in emerging-market investing, this is not yet the case for developed markets. Part of this reflects the nature of the asset class. It's far easier to see the links between the ESG factors and traditional credit metrics that drive hard-currency emerging-market investing than it is to see the relationship between ESG factors and developed-market local-currency yields, because yields are dominated by central bank actions and changes in policy interest rates.

But even though it's difficult to establish a systematic link between ESG pillars and local-currency bond yields, there is still a strong case for integrating ESG factors for developed markets. That's partly because the secular outlook for growth, inflation and interest rates is heavily influenced by long-term trends with deep ESG roots: populism, demographics and deglobalization. Indeed, many of these trends, including US political turmoil, rising trade tensions and a messy Brexit, have dominated the developed-market investment backdrop in recent years.

There are other ways we can leverage ESG factors to improve investment outcomes in developed markets. When we introduced a model to compare euro-area sovereign bond markets in 2009, we included three ESG proxies: demographic trends, GDP per capita and the World Bank's WGIs. The insights enabled us to more accurately assess sovereign credit risk. The Italian bond market, for example, has been driven mainly by concerns about governance.

This isn't solely about governance. The introduction of a new automobile emissions regime led to a 30% drop in German auto production in 2018 and 2019 that contributed to a sharp relative growth slowdown. And adverse social developments in Poland and Hungary have had a material impact on the way we think about both countries. As with Turkey, not all of these developments will be reflected in our ESG scores in a timely fashion, emphasizing the importance of supplementing our ESG model's quantitative output with traditional economic, institutional and political analysis.

A MORE COMPREHENSIVE VIEW OF CREDITWORTHINESS

The initial aim of our research was to improve on the typical ESG proxies used in traditional sovereign-credit analysis. By fortifying the social and governance pillars in our ESG framework and adding an environmental pillar, we feel we've done just that.

Among the advantages of our approach are its transparency, which allows us to unpack a country's ESG score, understand the factors driving it and forecast future trends.

Meanwhile, its focus on absolute, rather than relative, scores allows us to track the trajectory of individual countries through time, observe changes in their global ESG position and identify the factors driving these trends.

By combining forward-looking ESG profiles with our existing economic and sovereign balance-sheet analysis, we gain a more comprehensive view of sovereign creditworthiness and a stronger basis for investment decisions.

But the real power of ESG runs even deeper. The environment (E) and people (S) and the rules (G) governing the way they interact are the pillars upon which everything else is built. As such, they are the starting point for assessing economic and financial performance in both the emerging and developed worlds. That's why ESG considerations must be an integral part of the investment process for sovereign-debt research, just as it is for equities and corporate credit.

NEW YORK
1345 Avenue of the Americas
New York, NY 10105
(212) 969 1000

TOKYO
Hibiya Parkfront 14F
2-1-6 Uchisaiwaicho, Chiyoda-ku
Tokyo, 100-0011, Japan
+81 3 5962 9000

SYDNEY
Level 32, Aurora Place
88 Phillip Street
Sydney NSW 2000, Australia
+61 02 9255 1200

NASHVILLE
One Nashville Place
150 4th Avenue North
Nashville, TN 37219
(212) 969 1000

TORONTO
Brookfield Place
161 Bay Street, 27th Floor
Toronto, Ontario M5J 2S1, Canada
(416) 572 2534

SINGAPORE
One Raffles Quay
#27-11, South Tower
Singapore 048583
+65 6230 4600

LONDON
50 Berkeley Street
London W1J 8HA
United Kingdom
+44 20 7470 0100

HONG KONG
39th Floor, One Island East, Taikoo Place
18 Westlands Road
Quarry Bay, Hong Kong
+852 2918 7888

IC20201412
IC20201292
IMA-147622-2020-10-20
FIX–8017–0322
AllianceBernstein.com