GLOBAL MACRO SHIFTS

with Michael Hasenstab, Ph.D.

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ENVIRONMENTAL, SOCIAL AND GOVERNANCE FACTORS IN GLOBAL MACRO INVESTING

FRANKLIN TEMPLETON INVESTMENTS

Environmental, social and governance (ESG) factors are being recognized in fixed income investing as value-added indicators of potential economic performance. In this edition of Global Macro Shifts, Templeton Global Macro outlines how it integrates ESG factors into its research process. The team has developed a proprietary ESG scoring system called the Templeton Global Macro ESG Index (TGM-ESGI), to assess current and projected ESG conditions in various countries, and to facilitate macroeconomic country comparisons around the world.

This document is a summary version of the full research-based briefing, which can be found in its entirety at the Global Macro Shifts homepage.

Global Macro Shifts is a research-based briefing on global economies featuring the analysis and views of Dr. Michael Hasenstab and senior members of Templeton Global Macro.

Overview

The world of finance professionals has recently begun to attribute much greater and explicit importance to the environmental, social and governance (ESG) factors in investment decisions.

Interest has also increased within sovereign governments, emphasizing the effect that ESG has on macroeconomic performance. This should not be surprising. Economists and historians have for a long time recognized and debated the importance of environmental factors and of social and political institutions for the long-term economic development of countries. Some of the early theories—going back all the way to Machiavelli in the sixteenth century—assigned great importance to the role of the environment, stressing that geography and climate determined the success of agriculture, the prevalence of diseases, and other determinants of economic growth. The role of environmental factors has been explored more recently by Jared Diamond in his 1997 best-seller *Guns, Germs and Steel*, and by Jeffrey Sachs in a 2001 paper (*Tropical Underdevelopment*, National Bureau of Economic Research).

The importance of institutions has been studied and documented even more extensively. To give but two examples: Harvard political scientist Robert Putnam has argued that the very different economic performances of Italian regions can be traced to the respective strength of civic institutions all the way back to the Renaissance (*Making Democracy Work*, 1993). In *Why Nations Fail* (2012), Daron Acemoglu and James Robinson argued that economic and political institutions are by far the single most important driver of economic performance.

In our view, any macroeconomic analysis and investment strategy focused on long-term, fundamentals-driven performance should incorporate ESG factors as a key pillar of its analysis. ESG speaks to an economy's potential as an investment destination and the sustainability of that investment. Not only does industry research support the effectiveness of incorporating ESG analysis,[1] we have also found it to be a critical prong of our research process.

Consider:

1. The quality of governance, and of political and economic institutions, plays a crucial role in macroeconomic performance, particularly in emerging and frontier markets. Robust governance contributes to the quality, stability and predictability of the policy environment and typically goes hand in hand with stronger potential growth, as well as greater resilience in the face of domestic or external challenges. It contributes in an important way to determining the risk of financial and economic crises. A new administration that has the ability to radically shift policy direction can be reason to enter or exit a market. Some governance factors such as corruption and attitude toward foreign investment also present large risks through political scandals and policy changes that complicate investments.

2. Social conditions influence a wide variety of political issues, including stability and the policy mix, while also directly impacting a country's macroeconomic developments through competitiveness and efficiency. Although many social factors affect long-term growth potential, they can also have significant short-term impact. Lack of social stability can lead to armed conflicts or create opportunities for savvy political forces, oftentimes to the detriment of the population. At the same time, factors such as wage pressures and infrastructure development have real effects on both domestic and external activity.

3. Environmental factors also have an important role, particularly in emerging and frontier markets that tend to have looser regulation and more limited ability and resources to react. Natural disasters like droughts, floods, earthquakes and hurricanes can have devastating economic and human consequences. Other than the human costs, they can spark disruptions in energy, food and material availability that cause issues like skyrocketing inflation or supply chain disruptions. Unsustainable practices and pollution can cause social instability, and cleanup costs can cut into an economy's growth potential.

"In our view, any macroeconomic analysis and investment strategy focused on long-term, fundamentals-driven performance should incorporate ESG factors as a key pillar of its analysis."

Michael Hasenstab, CIO
Templeton Global Macro

1. See United Nations' PRI, "Sovereign Bonds: Spotlight on ESG Risks," 2013.

Our ESG Methodology and Proprietary Templeton Global Macro ESG Index (TGM-ESGI)

Combining all these factors and bringing them together with the traditional economic assessment of a country's trajectory and potential constitutes a non-trivial challenge. We have opted to take a rigorous and systematic approach, developing our proprietary Templeton Global Macro ESG index (TGM-ESGI), which allows us to quantify ESG inputs and enables comparison across a broad spectrum of countries.

We believe our approach has three key points of strength: (1) it has a comprehensive perspective, based on a careful selection of a broad spectrum of high quality indicators along with contribution from our internal research; (2) it provides a synthetic measure combining the different dimensions into a single numerical score that facilitates cross-country assessment; and (3) it has a forward-looking dimension based on our analysts' forecast of changes in ESG factors. We believe this makes it more powerful than alternative approaches that are based on only a few, disjointed indexes, and provide merely a snapshot of current conditions.

We employ a scoring system, in which countries are given a score from 0–10, with 0 being the lowest and 10 being the highest, to calculate a final ESG grade. The TGM-ESGI is constructed by overlaying the view of our research team upon a benchmark created from global indexes. To build our index we first canvassed representative and reliable indexes from reputable sources like the World Bank, the World Economic Forum and the United Nations. Our analysts then adjust benchmark ESG scores based on their proprietary country research and assign projected scores in anticipation of how these conditions will evolve in the medium term.[2] This grading system rests to an extent on our subjective judgment, but we firmly believe it allows us to incorporate the insights of our research team and provides a rigorous method to assess underlying opportunities in a way that complements more traditional macroeconomic tools.

Our ESG scoring includes 13 subcategories under the ESG groupings that we see as critical factors in measuring a country's economic sustainability. Some of these categories do not have immediate implications but can have significant effects in shaping an economy in the medium to long term. We must also note the fluid nature of ESG measures. While we have clearly delineated subcategories for the purpose of scoring, these factors cannot be easily compartmentalized. This challenge must be overcome in any methodology that attempts to quantify ESG inputs.

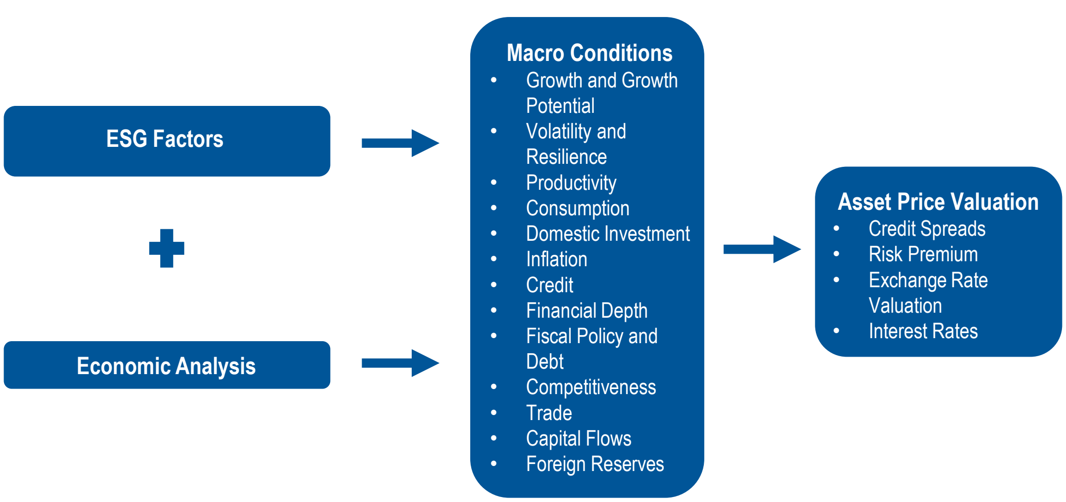
Current and projected scores are given individually for each subcategory and then averaged to attain a score for governance, social and environment. Within each of the three ESG categories, we assign equal weights to the 13 subindexes. We then calculate a final composite ESG score for each country with a weighting of 40% for governance, 40% for social and 20% for environment. The environmental factors receive a lower weighting because their impact on the economy often occurs over significantly longer time horizons than governance and social factors, as well as over longer timeframes than most fundamentally driven investment strategies.

The TGM-ESGI then enters our economic assessment as an additional metric to complement our macroeconomic analysis and asset valuation assessment. We want to clarify that the integration of ESG into our investment processes does not imply we are forming value judgments on individual governments, social structures or environmental policies. ESG simply serves as an additional tool to be used in formulating investment decisions based on financial considerations.

Exhibit 1 provides a visual illustration of our methodology.

The Role of ESG in Our Investment Process

Exhibit 1: ESG Factors and Economic Analysis Inform Investment Decisions



For a detailed list of the 13 subcategories of the TGM-ESGI, please refer to the full paper, which can be found at the Global Macro Shifts homepage.

2. Our medium-term projections are for the next three years.

TGM-ESGI: Country Rankings

Exhibit 2 shows the results of our scoring method for 44 countries. The grades range from a high of 9.2 for Denmark and Switzerland to a low of 2.2 for Venezuela. No country received a perfect score; the group that performed well on governance and environmental indicators did not always receive a high grade for some social subcategories, namely labor and demographics.

Our results show, as expected, that developed countries[3] have higher ESG scores; developed markets have an average grade of 8.2 compared to 4.9 among emerging markets. Similarly, we see that ESG corresponds strongly with gross domestic product (GDP) per capita. The relationship between these two indicators appears to be exponential; the payoff of stronger ESG performance on income rises as scores increase.

We should note that, especially at higher per capita GDP levels, the relationship with ESG scores becomes mutually reinforcing rather than a simple one-way causal relationship. As we mentioned above, strong governance institutions, social cohesion and sustainable environmental policies support economic growth and higher income levels. At the same time, as countries become richer they can invest more in state of the art infrastructure, assign greater priority to environmental sustainability, and develop a well-educated middle class that demands better social and political institutions.

ESG factors are constantly evolving and, as we argued at the outset, a key advantage of our TGM-ESGI lies in its forward-looking component. As Exhibit 3 illustrates, our analysts expect some significant shifts in ESG factors across a range of countries—in some cases improving, in some deteriorating.

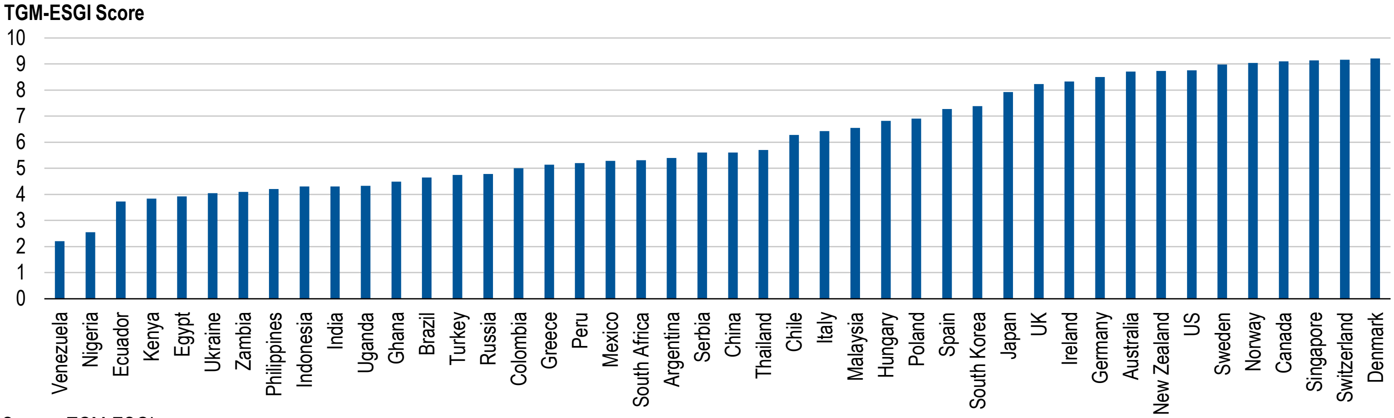
The ranks of the countries where we expect ESG factors to improve are dominated by emerging markets. Conversely, we expect a deterioration in the TGM-ESGI for several advanced economies, notably in Europe and Japan. Starting from lower average scores, emerging markets naturally have more room to improve; however, the fact that some advanced economies are expected to backtrack also speaks to the gradual convergence we have been seeing between advanced and emerging economies in terms of economic performance and weight in the global economy.

Environmental, Social and Governance Scores by Country (TGM-ESGI)

Exhibit 2: TGM-ESGI Scores by Country

As of February 2018

TGM-ESGI Score



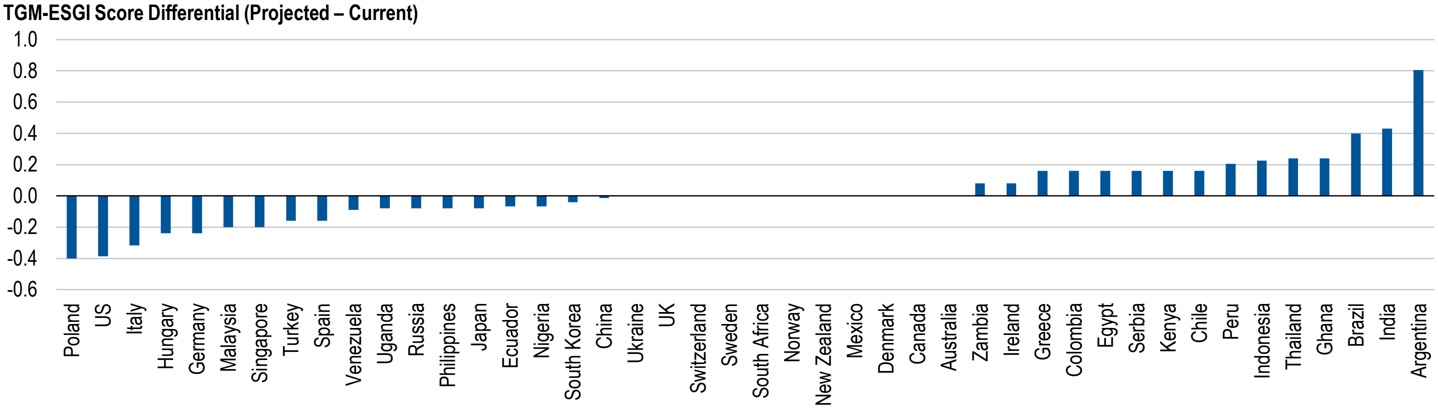
Source: TGM-ESGI.

TGM-ESGI Projected Scores by Country

Exhibit 3: TGM-ESGI Scores: Projected – Current

As of February 2018

TGM-ESGI Score Differential (Projected – Current)



Source: TGM-ESGI. Our medium-term projections are for the next three years.

3. As defined by the International Monetary Fund's (IMF's) advanced economies list in 2017.

“Most Improving” Case Study: Argentina

Argentina stands out as the country where we expect the greatest ESG score improvement (see Exhibit 4). Within the medium term we project its ESG score to rise 0.8 points from 5.4 to 6.2.[4] Argentina was one of the wealthiest countries in Latin America, with a young population, a highly educated labor force and a strong agricultural sector, as well as abundant oil and mineral deposits. But after an economic crisis in the early 2000s, Argentina began a path marked by isolation from trade, government-controlled prices and unsustainable fiscal policy. The result was a falling current account surplus and declining national savings combined with lower productivity. The government also began to manipulate data to mask the incredibly high inflation that resulted from the central bank printing money to fund ministry of finance spending. Argentina never recovered to pre-crisis levels in terms of regulatory quality and rule of law.

Similarly, corruption worsened significantly during the era of Kirchnerism, the specific strain of Peronism led by Nestor and Cristina Kirchner. Systemic corrupt behavior included nepotism in business contract allocation, unfair distribution of regional transfers from the central government and, as mentioned before, statistics distortion. Argentina became the first country to be sanctioned by the IMF for its data manipulation, particularly for inflation. Instead of allowing markets to set prices, the authorities used price controls and subsidies to artificially manage inflation; this resulted in a shortage of goods and underinvestment, turning Argentina from a net exporter of oil and gas to a net importer. The Kirchner leadership also worked consistently to undermine central bank independence and judicial power to check such behavior. As a result, Argentina’s rankings in the Corruption Perceptions Index by Transparency International increased significantly in the early 2000s and underperformed compared to regional peers like Brazil, Peru and Colombia.

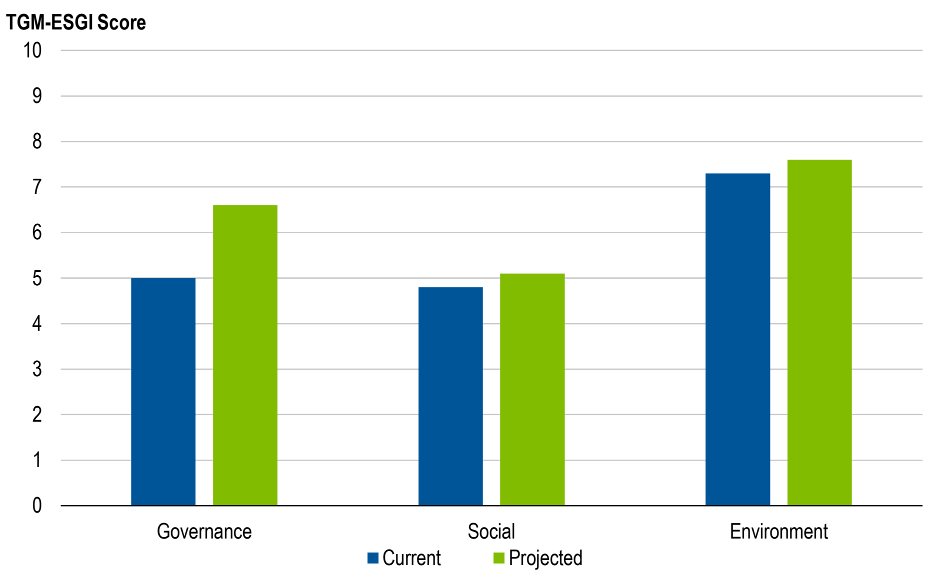
These dynamics began changing with the election of center-right leaning President Mauricio Macri in late 2015. In the past two years the government has launched a number of reforms to undo over a decade of damage. Notable achievements have included reestablishing de-facto central bank independence, clearing a significant portion of export and import restrictions, and embarking on a gradual path of fiscal adjustment. The government also floated the Argentine peso and adjusted the price of public utilities and transportation—tough decisions given the inflationary impacts. But the central bank moved capably to hike interest rates, and the government recognized it must enact policies necessary for long-term economic viability, despite the negative short-term consequences. One significant move was the government’s decision to begin reducing fiscal transfers from the central bank, a practice that began during the Kirchner era to finance growing budget deficits. The government also set up an independent statistics agency to start providing reliable data again, and the IMF announced in 2016 that the country can be trusted to provide accurate inflation estimates again.

We expect further progress. The government performed well during Congressional elections in October 2017. Not only did this victory result in stronger momentum for reform, but it also showed that the Argentinian population has turned away from the populist policies of Peronism, which dominated 20th century politics, in favor of a more orthodox policy approach. Government effectiveness should improve with the recent electoral victory, and we expect the policy mix to strengthen as the governing coalition continues to push forward reforms. Important issues on the agenda include tax reform to lower the corporate tax rate and a bill to improve labor market flexibility. These policy initiatives should help to improve competitiveness, encourage investment and lower unemployment levels. We also expect these reforms to begin to have a greater positive impact on economic activity. For example, Exhibits 5 and 6 show that real credit to the private sector and foreign currency deposits have already expanded significantly as confidence and flexibility returned to the banking sector. We are optimistic that this renewed financial activity has the potential to lift overall economic performance moving forward.

Argentina Shows Significant Improvement in Projected ESG

Exhibit 4: Argentina: Current and Projected Conditions (TGM-ESGI)

As of February 2018



Source: TGM-ESGI. Our medium-term projections are for the next three years.

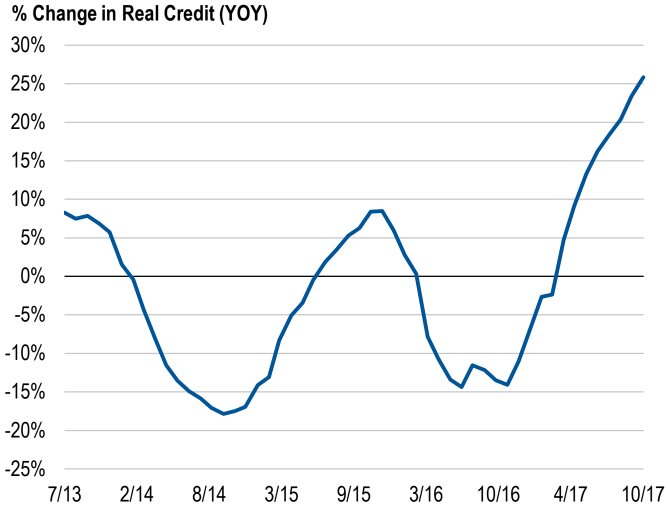
4. Our medium-term projections are for the next three years.

We continue to see Argentina as a unique case in which strong economic fundamentals in combination with the right policy mix can lead to a swift revival of ESG scores. A rocky history of mismanagement resulted in both inconsistent economic performance and a challenging relationship with foreign investors. But with the right leadership and popular support, we foresee a more sustainable economic path for Argentina. There remains much to be done, however, in reviving old industries and building new ones, as well as improving technological adoption and efficiency. Breaking down old administrative practices, implanting reforms and waiting for those reforms to become effective are all time-consuming processes and require patience from investors. Thus we see it as critical to monitor dedication from both the government and the population moving forward.

Confidence Is Returning to Argentina's Banking Sector

Exhibit 5: Argentina: Real Credit to Private Sector

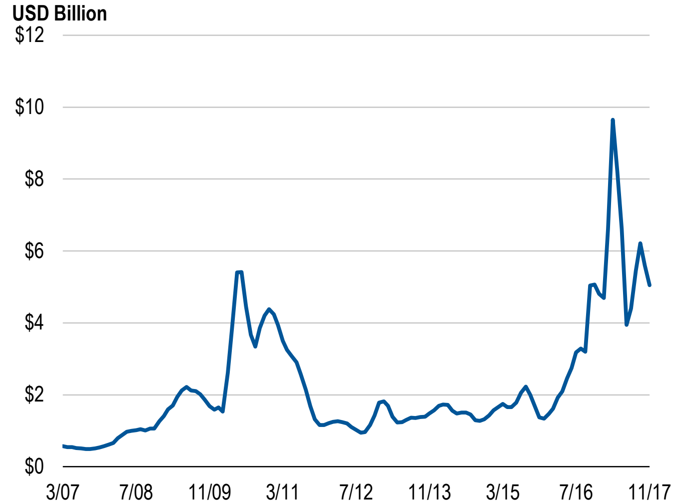
July 2013–October 2017



Source: Central Bank of Argentina.

Exhibit 6: Argentina: Foreign Currency Deposits in Banking System

March 2007–November 2017



Source: Central Bank of Argentina.

Backtracking Case Study: Poland

In contrast to Argentina, Poland (which does relatively well in our current ranking) has the worst projected deterioration within our 44-country sample. Our analysts expect the country's total ESG score to fall by 0.4,[5] entirely due to broad-based deterioration in governance (see Exhibit 7).

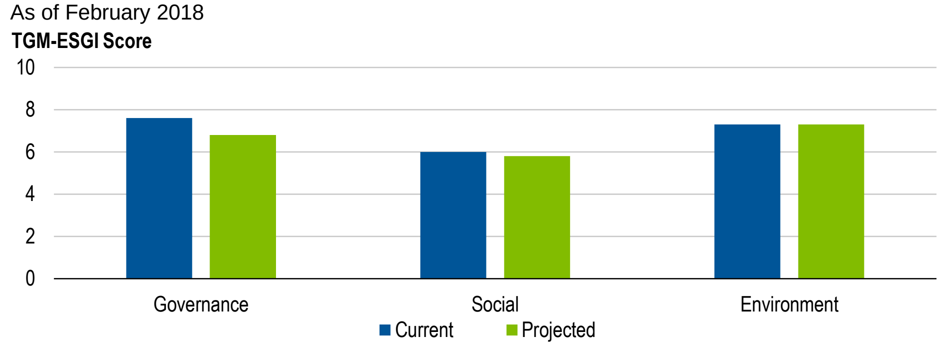
Until recently, Poland was considered one of the most successful examples of European Union (EU) integration and a case study in how to implement institutional reforms after the fall of the Soviet Union. The country benefited immensely from a 20-year, US$250 billion aid package that focused on building roads and schools. Poland's growth rate has been one of the strongest in the EU since its accession in 2004, and Poland was the only EU member country that did not fall into recession during the global financial crisis or the eurozone sovereign debt crisis. Along with strong growth, Poland experienced significant gains in quality of life measures like education and poverty reduction. Strong institutions, a flexible labor market, an investment-friendly environment and global trade integration all contributed to Poland's economic ascent. Yet the country has recently been turning away from many of these economic foundations in favor of nationalistic and populist policies.

Despite the strong headline statistics, there was underlying discontent within Poland. Unequal income distribution, distrust of political elite and disagreement with the EU's policies led to a large majority for the conservative Law and Justice Party (PiS) in the 2015 elections. The PiS campaigned on a strong nationalist, anti-immigration

Poland's TGM-ESGI Score Is Projected to Deteriorate

Exhibit 7: Poland: Current and Projected Conditions (TGM-ESGI)

As of February 2018



Source: TGM-ESGI. Our medium-term projections are for the next three years.

5. Our medium-term projections are for the next three years.

message and promised a lower retirement age as well as monthly subsidies for households with children. Within months of entering office, PiS fulfilled those promises; it refused to take in refugees, as had been agreed to under the previous government, it reversed the retirement age increase, and it implemented a program named 500+, which provides households with two or more children with PLN 500 per child per month.

Over the following two years, Poland adopted more than 13 laws affecting the entire structure of the justice system; in many cases these laws have raised concerns that they might enable political interference in the organization, power, administration and functioning of the justice system.[6]

The European Commission has noted with concern that some of these measures could undermine the independence of the judiciary, the separation of powers and legal certainty. It has therefore opened proceedings that could lead to sanctions against Poland.

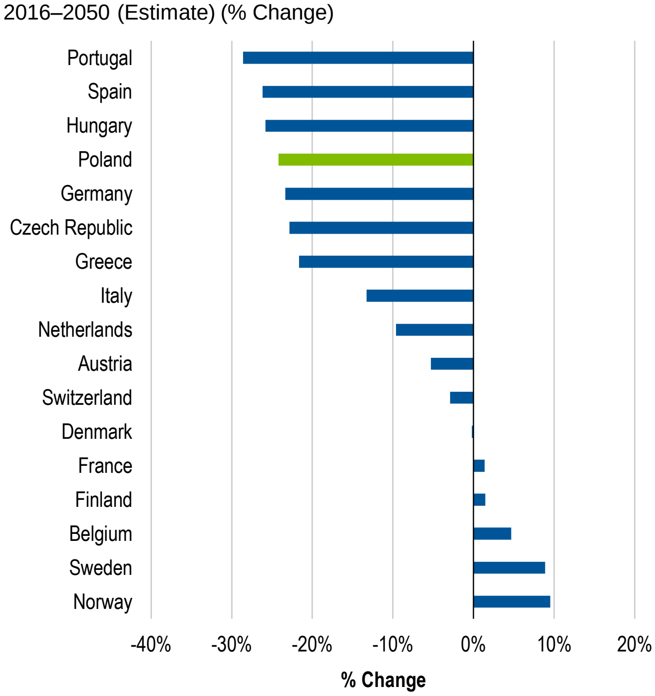
This backtracking on governance standards risks undermining Poland's influence in the EU—a significant drawback, given that Poland's demographic and economic size places it as the strongest of the Central and Eastern European EU members and in a position to carry important weight in discussions with the likes of France and Germany. It also already has had an economic impact: Polish leaders acknowledged that the disagreements and legal tensions with the EU complicate the negotiations for the 2021–2027 EU Budget Cycle, and might result in Poland receiving a lower amount of EU funds. The tensions, and the risk of further populist measures and of a further deterioration in legal certainty, also create more uncertainty for investors and could negatively impact foreign investment flows.

This slippage comes against the background of adverse demographic trends. Poland has one of the fastest aging populations within the world, with a national fertility rate of 1.32.[7] According to OECD estimates, the country's working age population will fall by 29% by 2050, the most within Europe (see Exhibit 8). This aging issue is compounded by a low female labor force participation rate that is nearly 3% below the OECD average (see Exhibit 9). While Poland had made significant gains in closing the gap in the past decade, progress appears to have plateaued, and some of the recent policies might prove counterproductive: experts have estimated that one short-term effect of the 500+ plan could be a decline in female labor participation, as the government subsidy discourages women, particularly in rural areas, from working. The party's anti-immigration stance could also limit the scope to slow the decline in the working age population.

So far the deterioration in ESG conditions does not appear to have had a significant effect on the Polish economy. Strong growth throughout the euro area since 2016, including among Poland's largest trade partners, has more than compensated for the government's poor economic policies and the country's structural weaknesses. Yet Poland's increasing distance from factors that contributed to nearly two decades of economic growth, reflected in a decline in its ESG scores, raises questions for us regarding Poland's medium- to long-term potential, especially when global economic conditions are no longer so supportive.

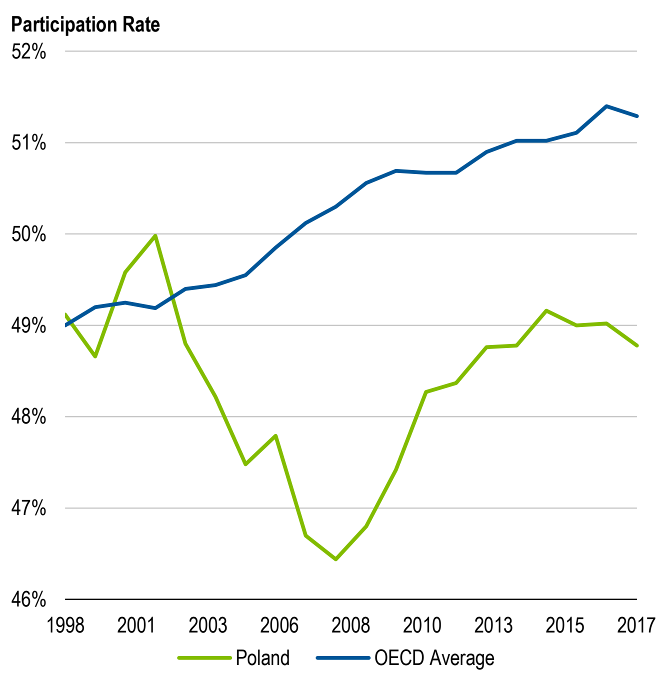
Poland Is Facing Challenging Demographic Trends

Exhibit 8: Poland: Working Age Population
2016–2050 (Estimate) (% Change)



Source: OECD.

Exhibit 9: Poland: Female Labor Force Participation
1998–2017



Source: The World Bank.

6. Source: European Commission.
7. Source: The World Bank, 2015.

The Importance of Environmental Factors Case Study: Japan

One of the largest natural disasters in modern history was the 2011 Tohoku earthquake and tsunami in Japan. The earthquake and tsunami combination also resulted in a meltdown at the Fukushima Daiichi nuclear plant, causing what has now come to be known as Japan's Triple Disaster. A horrific number of lives were lost and even more were displaced, but the disaster also caused large economic impacts; the four prefectures most heavily affected by the earthquake accounted for about 6.2% of Japan's GDP,[8] and broader regional supply chains in Asia were also impacted by the disasters as rolling blackouts occurred as a result of electricity production shortages.

One major consequence, and likely the most long-lasting, has been to Japan's energy consumption. As a resource-poor country that nevertheless aimed for energy independence, Japan began developing nuclear power in the mid-20th century and made nuclear energy a strategic priority in the 1970s. By 2010, nuclear power accounted for about a quarter of total electricity generation with the goal of increasing that level to 40%. These plans continued despite Japan's high exposure to natural disasters such as earthquakes because of its geographic location.

The meltdown at Fukushima and the resulting radioactivity risks changed the public's opinion of nuclear power, and all such plants were shut down in the aftermath. The result was a significant increase in fuel imports to plug the hole that nuclear power had previously filled; fossil fuels' share of electricity generation increased by 23% while nuclear energy dropped to 2% by 2012 (see Exhibit 10). A weak yen and record-high commodity prices during this time caused the fuel deficit to balloon and dragged down Japan's current account surplus by more than 1% of GDP (see Exhibit 11).

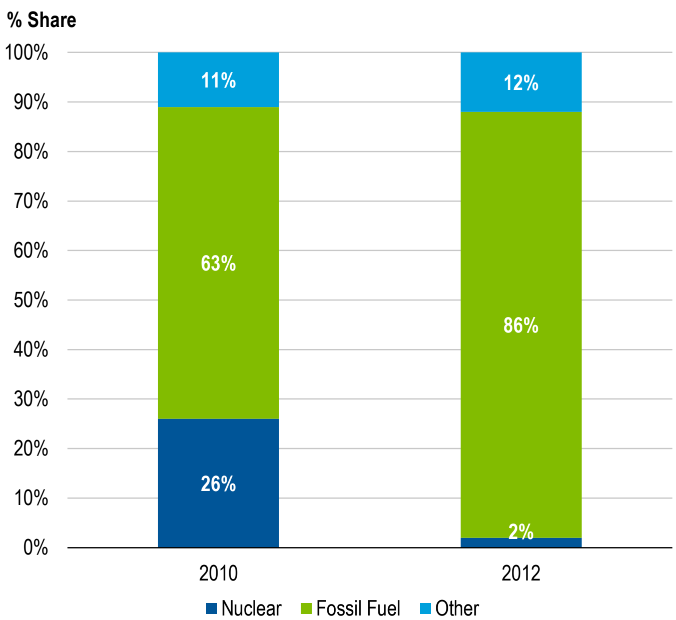
A more short-term impact was on the currency (see Exhibit 12). While we already had views on the yen due to the expected growth divergence between the US and Japan and the effects that would have on monetary policy and interest rate differentials, the earthquake further solidified our conviction in that outlook. We expected the natural disaster to amplify the business cycle and slow down consumer spending to further exacerbate that growth differential.

Given the devastating effects of the earthquake, its impact on the economy as a whole was much more contained than feared—in large part thanks to the strength of Japan's social and governance institutions, reflected in its high S and G scores (see Exhibit 13). From rapid evacuations following the meltdown of Fukushima to the effective management of power shortages, Japan's solid institutions and social cohesion protected the country from much of the far more severe

Greater Fuel Imports Due to the Meltdown Increased Japan's Current Account Deficit

Exhibit 10: Japan: Electricity Generation by Source

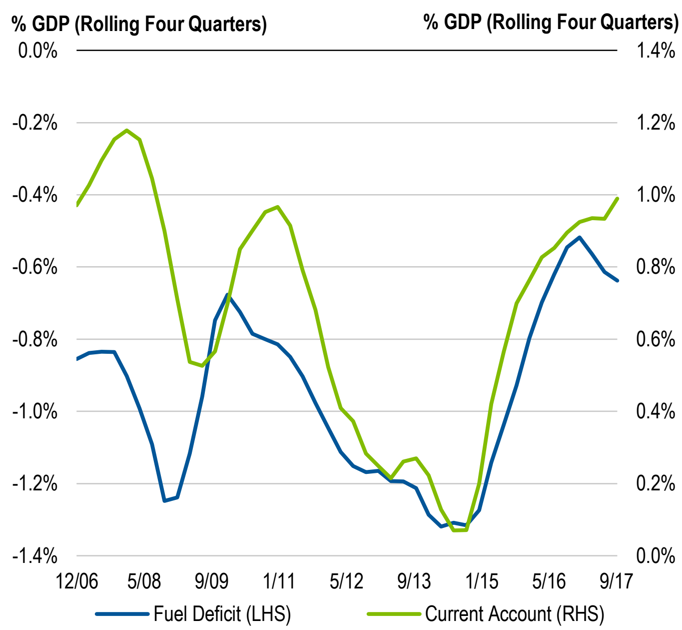
2010 and 2012



Source: US Energy Information Administration.

Exhibit 11: Japan: Current Account vs. Fuel Deficit

Q1 2006–Q3 2017



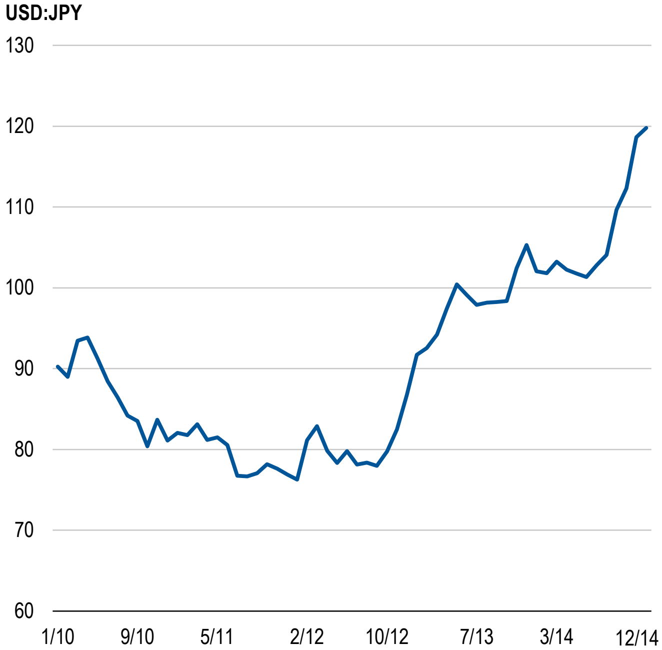
Source: Ministry of Finance, Bank of Japan.

8. Source: Japan Statistical Yearbook, 2011.

consequences of a massive natural disaster. Even major political events following the earthquake, including the resignation of then Prime Minister Naoto Kan, did not significantly destabilize the country's macroeconomic trajectory. Japan therefore serves as a reminder of both the potential impact of environmental factors and the resilience that strong social and governance institutions afford to a country.

The Japanese Yen Appreciated Against the US Dollar

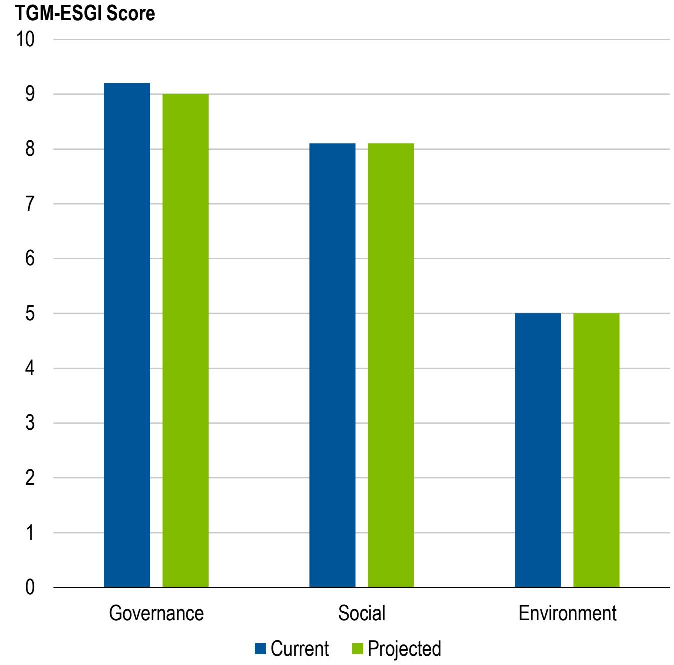
Exhibit 12: Japan: Yen Spot Price
January 2010–December 2014



Source: Bloomberg.

Japan Scores Well on Government and Social, but Relatively Weak on Environmental

Exhibit 13: Japan: Current and Projected Conditions (TGM-ESGI)
As of February 2018



Source: TGM-ESGI. Our medium-term projections are for the next three years.

Conclusion

ESG factors have started to be recognized in fixed income investing as value-adding indicators of economic performance; an increasing number of portfolio managers and investment specialists are now beginning to incorporate some form of ESG into their decision-making process. We have long seen ESG as an especially critical tool for evaluating long-term economic performance, and by extension prospects for sovereign debt value, as its components align naturally with our analytical approach based on political and macroeconomic fundamentals. In this paper we have outlined our rigorous approach to ESG, based on our proprietary TGM-ESGI, which creates a comprehensive measurement to facilitate cross-country comparison, along with a forward-looking component based on our analysts' expert views. The index correlates with macro conditions and can serve as a key indicator of important shifts in economic and asset price performance, as illustrated by the case studies discussed in the paper.

Michael Hasenstab, Ph.D.
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*This edition of Global Macro Shifts was co-authored with Research Associate Vivian Guo.**

Vivian Guo
Research Associate
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About Global Macro Shifts

Global Macro Shifts is a research-based briefing on global economies featuring the analysis and views of Dr. Michael Hasenstab and senior members of Templeton Global Macro. Dr. Hasenstab and his team manage Templeton's global bond strategies, including unconstrained fixed income, currency and global macro. This economic team, trained in some of the leading universities in the world, integrates global macroeconomic analysis with in-depth country research to help identify long-term imbalances that translate to investment opportunities.

**The team would also like to thank Julie Moret, Head of ESG, for contributing her valuable insights on ESG investing.*

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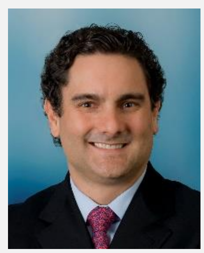

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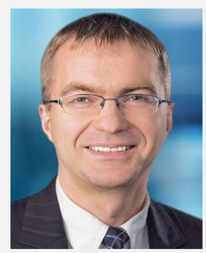

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