



# Beyond Ratings Weekly Digest

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Your briefing on augmented financial risk analysis

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## ANALYST INSIGHT

### Climate risk uncertainties: “better to be approximately right than precisely wrong”

A lot is said and written about climate risks for investors, and today we would like to highlight the uncertainties that climate change issues imply.

As a former U.S. Secretary of the Treasury liked to say: “the only certainty is that there is no certainty”. And even Socrates said: “the only thing I know is that I know nothing.” Such statements could be excessive if they resulted in theoretical and practical relativism, but they also remind us of the humility and determination that we may need when we face unavoidable uncertainties regarding the future in complex environments. The same former U.S. Secretary of the Treasury also added: “despite uncertainty we must decide and we must act”, and Socrates' paradox clearly did not correspond to the relativistic perspective of the sophists of his time. Relativism can be an excuse for not acting, but the paradox of our limits is rather a strong stimulant for us to search and act. Limited “knowledge” opens to “wisdom”, not to despair or indifference.

It may be useful to remember this when we think of climate change, given both our tendency to focus on “the facts”, and the challenges raised by the uncertainties we inevitably face. We are not talking here about climate scepticism: as the **50% global increase in floods and extreme rainfall events** in the last decade or the **growing frequency of billion-dollar disaster events** in the U.S. attest, we can see a climate problem today and we have a responsibility to act.

However, uncertainties and a lack of appropriate data can make climate action challenging for investors. While carbon emissions tend to be well-documented, other future climate physical risks are difficult to address. Just to mention a few challenges:

- physical risks are long-term, pointing to both a “tragedy” of time horizons and uncertainties regarding precisely how and when disasters and extreme events will intensify;
- climate models provide consistent global results but have a more limited capacity to provide forecasts at the local level (for which data are needed when assessing risks at a country, corporate or asset level);
- natural disasters occur already, and it is difficult to make a direct link between individual disasters and climate change in general (as what is at stake is more a matter of increasing frequency or intensity);
- the typology of risks itself is not certain, *i.e.* should we be more worried about sea-level rise or extreme heat?
- what magnitude of extreme events should be expected? This will depend on many factors including the level of carbon emissions over time, but also on the level and range of **the equilibrium climate sensitivity** (“the known unknown”) or on potential risks of non-linear threshold effects with massive impacts (e.g. what if we the Gulf Stream collapses, the carbon-rich permafrost thaws, or Greenland's and Antarctica's ice sheets melt...).

What can investors do today to assess climate physical risks in this context? A certainty is that we see notable climate risks today, and a risk must not be assessed and managed because it is easy to do so, but because of its potential impacts. For example, **a recent study** by Stanford/Cambridge (MA)

researchers states: “relative to a world that did not warm beyond 2000-2010 levels, we project 15%-25% reductions in per capita output by 2100 for the 2.5-3 °C of global warming implied by current national commitments, and reductions of more than 30% for 4 °C warming.” In addition, these current cost estimates tend to be **higher than some previous estimates**.

It should also be noted that climate physical risks are not the only risks that are associated with uncertainties. This is also the case when dealing with geopolitics or political instability. In these cases, simply weighing probabilities may not be appropriate - for example, averaging probabilities in response to the question “will there be Brexit or not” may provide unsatisfactory results. This could be, by the way, a response to the positions expressed by the former U.S. Secretary of the Treasury whom we quoted. The priority is indeed to ask the right questions (whether they are difficult or not), and the question of climate physical risks is clearly a relevant long-term question for our investments, economies and societies.

So, for investors, first steps could simply be to consider the following elements beyond uncertainties:

- analytical frameworks, sensitivity matrices (by sector, etc.), methodologies and databases are developing and can be used to support physical climate risk analysis by investors and reduce uncertainties: one of the most recent illustrations of that is the report on “**Advancing TCFD guidance on physical climate risk and opportunities**” that was recently published by EBRD/GCECA;
- when dealing with non-sovereign assets, physical climate risks can be a good way to integrate country risk into risk analysis, given the geographic/country dimension of the risks at stake;
- though physical climate risks may be of low frequency and high magnitude, taking them into account can discriminate amongst assets that otherwise present relatively equivalent characteristics and perspectives on other criteria, so as to minimise risk for a given targeted performance;
- it is possible to compare several assessments of physical climate risk based on several sources and different approaches, as several methodologies exist and the scopes of physical climate risks considered are different (e.g. purely physical damages vs. economic damages, integration of adaptive capacity factors vs. focus on risks, etc.). This approach helps to identify consensus: for example, if a country is at risk based on all methodologies, this is relevant information for an investor.

Furthermore, it should also be noted that growing awareness of physical climate risks is also of course a strong reason to collectively invest in energy transition, precisely to limit these risks.

To conclude, uncertainty is an issue when tackling climate risk in investment. However, uncertainty is already associated with other types of risks that matter even for less risky assets (such as sovereign bonds), because of their potential high magnitude and non-linear effects at a broad scale. So physical climate risks do matter and rather than inspiring indifference or relativism, uncertainty could actually encourage our thinking and action. Despite uncertainty, we must indeed act and invest our financial resources, and we should of course do so in the “real economy” where they can be used in a resilient way and serve “real” and needed activities.

Fortunately, physical climate risk assessments are developing, and several analytical frameworks already exist. They will not be precise on everything, but should that be their goal? As Warren Buffet recommends: “It is better to be approximately right than precisely wrong.”

*Guillaume Emin, Project Manager*

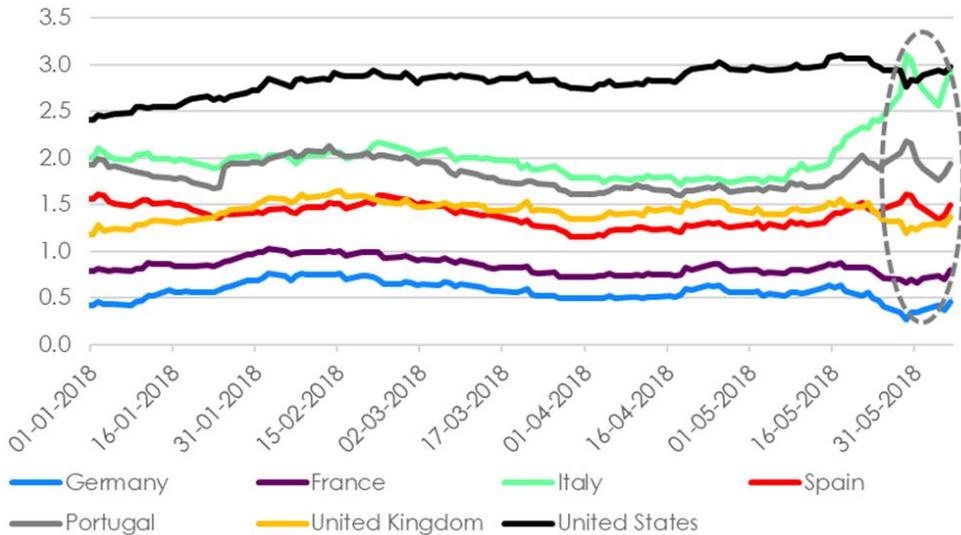
*Source: Beyond Ratings*

WEEKLY FOOD FOR THOUGHT

Sovereign Risk

The ECB and the Italian political situation push up government bond yields

Evolution of 10-year bond yields since the beginning of the year (in %)



With the new Italian government taking office at the end of May, tensions in the European bond market have made their comeback. Moreover, the approach of the end of the ECB's QE, scheduled for next September, adds uncertainties and thus some volatility. Indeed, in one month, the Italian 10-year bond yield skyrocketed by 117 bps, around 3%, while Spanish and Portuguese 10-year bond yields increased by 24 and 27 bps respectively. For the core

countries of the Eurozone, the tightening movement was less marked, with German and French 10-year bond yields that remained relatively stable as the American and British 10-year bond yields.

At the end of the day, the formation of a coalition government in Italy that opposes everything, apart from Euroscepticism, weighs heavily on the Italian bond market. On the side of the uncertainties related to the conduct of the Eurozone monetary policy, the ECB's meeting of June 14 will be decisive for several reasons. Markets should be set for the QE's end and first interest rate hike should be formally addressed. Volatility is back, and for a while...

Julien Moussavi, Head of Economic Research

Sources: Beyond Ratings, Datastream

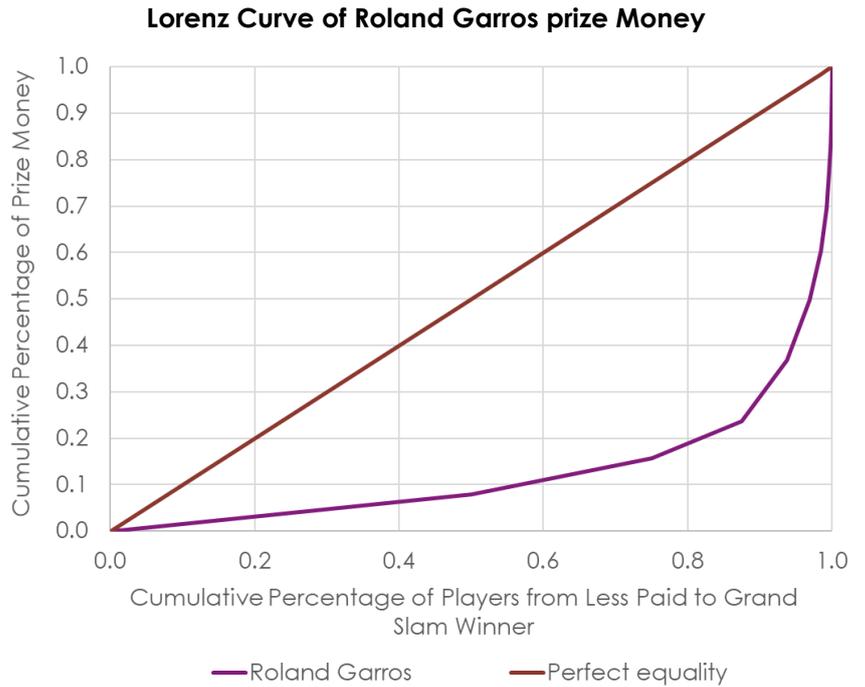
ESG

A quite dishonest ESG assessment of Roland Garros

As the second tennis Grand Slam of 2018 enters its second week, at the time of writing we are not sure if Rafael Nadal already won his eleventh trophy on the clay courts of Roland Garros. However, we already have a good idea of the ESG performance of the tournament. First, we should point out the incredible inequality that players face. The winner of Roland Garros will win EUR 2.2 million, a whopping 733 times more than a player losing early in the qualification tournament.

Globally, Gini coefficient, which ranges between 0 (perfect equality) and 1 (extreme inequality: one person gets all wealth) reaches a terrible 0.74. For a matter of comparison, the worst country in terms of revenue inequality (South Africa) has a Gini coefficient of 0.63. The only positive element is the female-male salary alignment. However, some ball boys and girls are no more than 14 years old and, shamefully, are not even paid for spending hours under hot sun, running after yellow balls.

From an environmental point of view, 60,000 balls (changed every 9 games) are used (and recycled into flooring), 1 ton of bananas are eaten, and 100,000 bottles of water are sold during the two weeks of the tournament. On the top of that, the competitors are coming from all around the world, often by plane. A real environmental nightmare... Additionally, 26.4 tons of clay are transported from north of France to cover the 24 courts of Roland Garros. Fortunately, Wimbledon and its grass courts are coming, a good E point for the British Grand Slam.



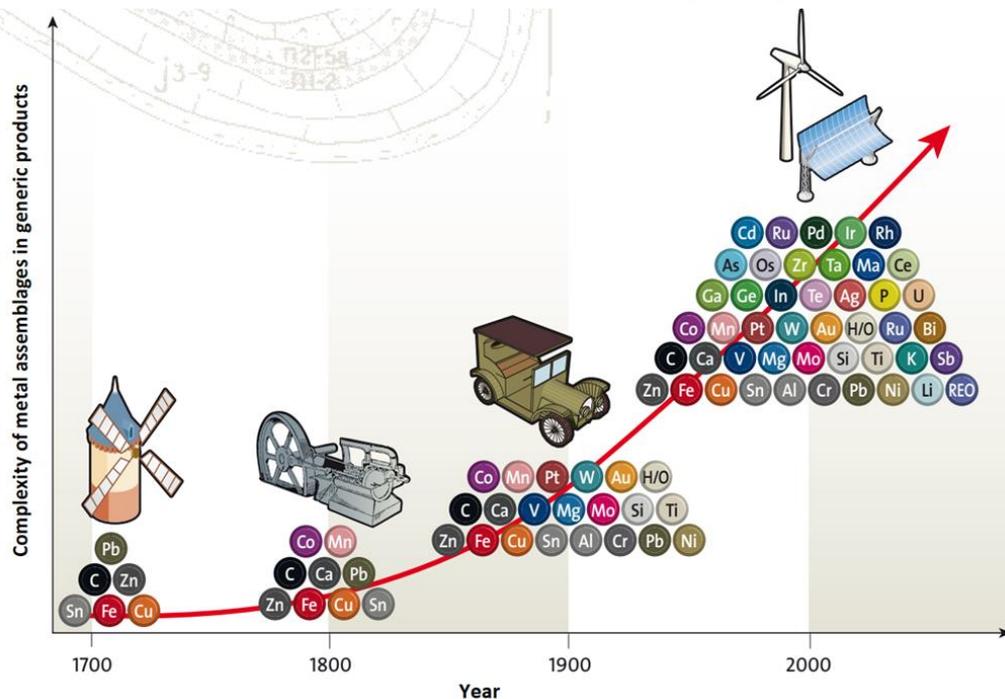
*Emeric Nicolas, Head of Statistics*

*Sources: Beyond Rating, Roland Garros, World Bank*

## Carbon/Climate Change

### Can we really close the mines?

The increase in the complexity of metal assemblages in generic products



Following progress and technological developments, human objects are increasingly ingenious. The mineral resources necessary to produce one object accordingly grow in number and diversity.

Power generation is a striking example. In 1700, a windmill could be built with a reduced number of metals – mainly lead, copper, zinc and iron. Today's power generation technologies, including low-carbon technologies such as photovoltaic panels or eoliennes, use numerous new

resources – such as lithium, cobalt and nickel, to cite but a few. Rare metals are prized for their unique properties and used in an increasing number of technologies, from smart appliances to electric cars. Going forward with the energy transition calls for strong developments in such "green" technologies, which leads to an increasing demand in mineral resources.

This means that tremendous improvements need to be made in material recycling and that mining industries will become ever more needed in a low-carbon world. Yet, mining is well known to cause major environmental impacts and is often linked to social issues such as child labor, rights abuses and armed conflicts. To address the already high demand in minerals and the even stronger demand to come, closing mines may therefore not be a possible choice. More effort and investments are necessary to help reduce their overall impact and better integrate them into a sustainable future.

*Claire Hugo, Analyst*

*Sources: Beyond Ratings, Hal-BRGM - Guyonnet et al.*

## MORE ON BEYOND RATINGS' SOVEREIGN EXPERTISE



**Sovereign & Country  
Risks**



**ESG Research**



**Carbon Footprints**

## MORE RESEARCH

### Recent Beyond Ratings Research Notes:



• **How ESG Can Improve Sovereign Yield Performance Analysis** ▪ November 2017



• **Social Performance and States Economic Growth** ▪ March 2017



• **Effects of the integration of "Energy-Climate-Natural Resources" determinants in the country risk methodology** ▪ February 2017



• **Inequality, Human Capital and Growth** ▪ June 2017



• **Allocation methodology of national climate budgets** ▪ February 2017

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