

A nighttime photograph of the United States Capitol dome, illuminated from within, showing the intricate architectural details of the dome and the statue on top. The image is dark, with the dome's lights providing the primary illumination. The Cardano logo is in the top right corner.

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Climate Change and Public Debt: two years later

June 2025

Reflection with Hilde Veelaert and Pim Burggraave on their 2023 analysis

In 2023, Hilde Veelaert and Pim Burggraave published a two-page article titled **“Climate Change: A Game Changer for Sovereign Debt.”** Their thesis was clear: climate change structurally affects government budgets, and anyone seeking to assess sovereign risk must take ESG factors into account. Two years later, the geopolitical landscape has shifted significantly—with the return of a Republican administration in the U.S., rising global tensions, and an accelerating climate crisis. We spoke with Hilde and Pim to assess which parts of their analysis still hold, and what they would write differently today.



Read the article here [“Climate Change: A Game Changer for Sovereign Debt.”](#)

Experts



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Austerity or Expansion? Climate Policy Under Political Pressure

“The Inflation Reduction Act (IRA) was still a major stimulus for sustainable investments in the U.S. two years ago, but parts of that policy have since been reversed by the new administration,” says Hilde Veelaert. “That matters for public finances, because the IRA primarily operated through tax incentives—companies paid less tax if they invested in green technologies. This reduced government revenue and thus increased public debt.”

Even without those tax breaks, the U.S. debt has continued to rise. Pim Burggraave explains: “Since early 2025, economic confidence has declined. Uncertainty around new trade tariffs, geopolitical tensions, and inconsistent climate policies—particularly in terms of regulations, subsidies, and international agreements—has made businesses more cautious. This weighs on U.S. growth expectations and pushes short-term inflation

expectations upward. As a result, investors are more risk-averse and demand higher yields on U.S. government bonds. The 10-year Treasury yield has risen from 0.69% to 4.50% over the past five years. Part of that is due to strong growth, but also to higher inflation—and more worryingly, to increased swap spreads, which reflect the credit risk premium investors demand.”

This credit risk trend isn’t limited to the U.S. Globally, investors are increasingly scrutinizing the climate vulnerabilities of countries they invest in—reflected in rising yields on long-term government bonds. Burggraave notes: “Physical risks—like floods, wildfires, or extreme drought—make certain countries riskier in investors’ eyes. Studies by the IMF* show that these countries have experienced sharper increases in long-term interest rates. An ECB study** also confirmed that rating agencies are placing more weight on physical risks, though the emphasis still lies more on direct impacts than on transition risks.”

* [This Changes Everything: Climate Shocks and Sovereign Bonds](#) (IMF)

** [Creditworthy: do climate change risks matter for sovereign credit ratings?](#) (ECB)



Surprises of the Past Two Years: Setbacks and Silver Linings

Asked what insights they may have underestimated in 2023, both experts are candid. Veelaert: “We perhaps didn’t emphasize enough how rapidly adaptation costs would rise. Due to increasing extreme weather events—think of the recent wildfires in California or floods in Southern Europe—governments are forced to invest more quickly and more heavily in infrastructure repair and climate resilience. That immediately affects national budgets.”

Burggraeve adds: “Another oversight was the political U-turn in the U.S. The shift since early 2025 has heightened uncertainty around international climate finance, which also affects global cooperation—especially now that Europe is taking relatively more of the lead.”

But there were also positive surprises. “The business case for renewable energy turned out to be much stronger than we expected,” says Veelaert. “Where in 2023 we still assumed prolonged dependence on public support, we now see many green technologies—like solar, battery storage, and offshore wind—becoming economically viable even without subsidies. This is thanks to technological progress, scale, and plummeting costs.”

Burggraeve: “Moreover, the energy transition is creating jobs. In both the U.S. and Europe, investments in clean energy are not only delivering environmental benefits but also boosting employment in construction, engineering, and maintenance. That strengthens the economic logic for continuing these investments, even when political support wanes.”

Investors and Rating Agencies: ESG Becoming Unavoidable

A key point in the original article was the need for an ESG lens in credit assessments. Is that mainstream now? “We’re not there yet,” says Veelaert, “but the shift is underway. S&P has launched a consultation on incorporating ESG risks; Fitch is working with climate KPIs; and new indicators like ‘climate vulnerability signals’ are emerging.”

For sovereign bond investors, Burggraeve stresses the importance of structurally including climate and physical vulnerabilities: “We’re seeing significant spread increases on long-term bonds from climate-vulnerable countries. This isn’t theory anymore—it’s already priced into the markets.”

Europe: Higher Debt, Different Compass

Notably, Europe is sticking to its climate financing path. “The EU continues to invest through programs like the Innovation Fund, InvestEU, and the Industrial Decarbonization Accelerator Plan,” says Veelaert. “But public debt is rising here too. Climate adaptation, affordable energy, and industrial greening all come at a cost—on top of growing defense spending.”

Still, they don’t see a shift in course ahead. “The urgency is only becoming clearer,” says Burggraeve. “There’s no political majority in Europe for climate denial or withdrawal from green industrial policy. That makes Europe strategically attractive to investors who seek both sustainability and stability.”



‘Climate Risk is Sovereign Risk: Climate as a Key Variable in Assessing Government Bonds.’”

What Investors Should Do Differently Now

Finally, what should investors fundamentally change in 2025 compared to 2023? Both experts agree: “Place more focus on physical risks, consistently weigh ESG factors, and differentiate between countries that are advancing in climate policy versus those that are backtracking.” Veelaert concludes: “A new generation of investors is emerging who view climate adaptation as an inherent credit risk.”

And if they were to rewrite their article today? Burggraave doesn’t hesitate: “The headline would be: ‘Climate Risk is Sovereign Risk: Climate as a Key Variable in Assessing Government Bonds.’”

Five considerations for the investment policy in 2025

- 1. Incorporate Climate Risks More Explicitly into Country Analysis**
Physical risks—such as floods or droughts—can lead to higher financing costs for governments in affected regions. Long-term sovereign bonds may be impacted. It can therefore be valuable to explicitly map these risks as part of your country risk assessments.
- 2. Evaluate the Role of Sustainability Factors in Allocation Decisions**
Environmental, social, and governance (ESG) factors are increasingly linked to financial resilience. New analytical methods from market players and rating agencies can support a more structured integration of these factors into portfolio allocation.
- 3. Assess the Potential Effects of Changing Climate Policies**
Policy shifts—such as a rollback of climate commitments—can increase economic uncertainty. Consider factoring in the direction and credibility of climate and energy policy when evaluating country-specific risks.
- 4. Explore Opportunities in Countries Benefiting Economically from the Energy Transition**
Clean energy sources are becoming profitable in more regions without the need for subsidies. This trend can lead to economic growth and job creation. Such countries may offer interesting opportunities for broader portfolio diversification.
- 5. Factor Public Climate Adaptation Spending into Long-Term Outlooks**
The cost of climate-resilient infrastructure and post-disaster recovery is on the rise. These developments can affect fiscal space and long-term financing needs of governments, making them relevant for sovereign debt outlooks.