# Collateral framework: How to improve the new climate factor

## I. Introduction

The European Central Bank (ECB) has taken steps to integrate climate considerations into its monetary policy operations since its 2021 Climate roadmap.[1] The ECB focused first on its corporate purchase programmes and introduced a 'climate score' to favor less carbon intensive companies for new purchases. While highly relevant, this measure effectively only lasted 14 months due to the end of quantitative easing and related asset purchases.[2]

This was a setback to the ECB's climate agenda, but asset purchases were not the only monetary policy tool considered: the ECB had also promised measures to integrate climate change into the Eurosystem collateral framework. This framework defines the rules regarding assets' eligibility (which assets can be pledged as collateral when banks borrow from the central bank) and valuation of eligible assets (depending on the risk level of the asset, a discount rate, or *haircut*, is applied).

In July 2025, after years of uncertainty,[3] the ECB finally announced a measure to integrate climate change into the collateral framework.[4] From 15th June 2026, a 'climate factor' will be added in the risk assessment of some assets eligible as collateral. This will affect how they are valued.

Given the short-lived tilting of asset purchases, the adjustment of the collateral framework is an important test of the ECB's ability to implement long-lasting and impactful measures to integrate climate change at the core of its activities. This briefing investigates the climate factor as announced, and highlights recommendations to improve it so it doesn't ultimately miss the mark.

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[1] European Central Bank, ECB presents action plan to include climate change considerations in its monetary policy strategy, 21 July 2021.
[2] European Central Bank, Frequently asked questions on incorporating climate change considerations into corporate bond purchases, Updated 8 January 2025.
[3] The ECB first mentioned the collateral framework in 2021, the following year the ECB said it will look into implementing three key measures – one was judged unnecessary after a few months, whilst the second was deemed unfeasible in 2024. The last one is still in the air in part due to the latest changes to the Corporate Sustainability Reporting Directive.
[4] European Central Bank, ECB to adapt collateral framework to address climate-related transition risks, 29 July 2025.

## II. The ECB climate factor

***Key features of the climate factor***

From June 2026, the ECB will add a climate factor when assessing marketable assets issued by non-financial corporations and their affiliated entities.[5] The goal is to improve how the ECB considers the potential financial impact of climate transition risks in its lending operations, as the ECB recognizes that these risks remain largely unaddressed. The ECB focuses on transition risks, meaning risks linked to the decarbonization of the economy (e.g. repricing of assets, assets becoming stranded, changing consumer preferences, policies etc.) over physical risks. The factor is therefore designed to penalize assets which are tied to activities incompatible with the transition.

The climate factor of each asset is calculated once a year following a two-step approach (see the annex for the detailed formulas). First, an 'uncertainty score' is calculated. This score measures transition-related risks of an asset looking at three components:

- **Sector-specific stressor**: how exposed the sector is to climate transition risks, based on the ECB climate stress test.[6] All assets issued by entities within a specific sector have the same stressor. Companies operating in high-emitting industries (such as fossil fuels, utilities and transportation) are expected to face the highest risks.
- **Issuer-specific stressor**: climate metrics of the company issuing the asset, derived from the 'climate score' that was applied to the corporate bond purchases.[7] The climate score was based on: (1) past greenhouse gases emissions of the company, (2) expected changes in future greenhouse gases emissions (reduction targets); and (3) quality of disclosure of emissions data.[8] All assets from the same entity have the same issuer-specific stressor.
- **Asset-specific vulnerability**: how long will the asset be exposed to climate risks, measured by the residual maturity of the asset.

The higher these components are, the higher the uncertainty score.

Second, the uncertainty score of the asset is plugged into a formula to get its climate factor. The formula considers other parameters set by the ECB Governing Council.[9] There

[5] European Central Bank, Guidelines (EU) 2026/[XX] of the European Central Bank of 22 January 2026 amending Guideline (EU) 2015/510 on the implementation of the Eurosystem monetary policy framework (ECB/2014/60).
[6] The ECB will look at the last available Eurosystem climate stress test. At the time of writing this briefing, the latest stress test is the Fit for 55 stress test from 2024.
[7] European Central Bank, Frequently asked questions on incorporating climate change considerations into corporate bond purchases, Updated on 8 January 2025.
[8] The climate score for the tilting of asset purchases was between 0 and 5: the higher the score, the better the climate performance. In the case of the issuer-specific stressor, this will be inversed with better climate performance leading to a lower issuer specific stressor.
[9] See annex for detailed methodology.

is a negative relation between the uncertainty score and climate factor: a lower uncertainty score gives a higher climate factor. A high climate factor means a lower penalty on the value of the collateral. The collateral value of each asset is corrected with the climate factor once the haircut has already been applied.

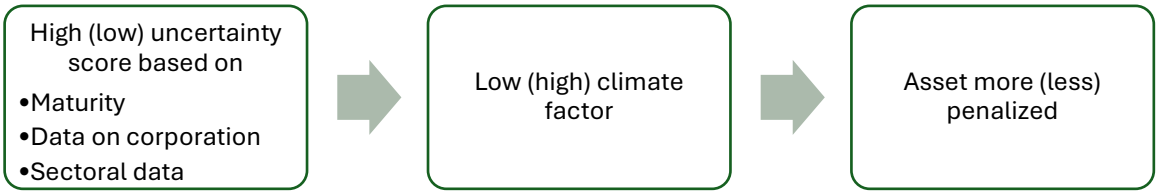


Figure 1: The climate factor

***The impact of the factor***

The announcement of the climate factor was welcomed as an important step forward for the integration of climate change in the ECB's activities.[10] The collateral framework is essential to monetary policy, the measure therefore shows the ECB considers climate risks to be relevant to its core activities. Unlike the tilting of asset purchases in favor of greener companies, the measure does not depend on the monetary cycle: it will remain relevant regardless of the ECB monetary policy stance.

The effect of the climate factor should be understood through two channels. First, the factor has a direct effect on the use of collateral. Banks pledge assets as collateral to get refinancing from the central bank. The value as collateral of an asset depends on its market value, its haircut, and now, its climate factor. In the case of two assets with identical market values and haircuts, the bank would be able to get more central bank money using the asset with the highest climate factor (i.e. the least transition risks). Overall, the climate factor makes it less appealing for banks to pledge assets tied to high emission activities, and therefore to hold them.

In addition, by becoming less desirable for banks, these assets may lose value on financial markets and raise the cost of funding for some companies. The climate factor should end up costing money to high-emitting corporations, like fossil fuel companies. However, this additional cost is believed to be relatively small in practice, especially for large corporations.[11]

[10] Green Central Banking, ECB adds climate to its collateral framework, 31 July 2025.
[11] In an article from September 2025, Follow the Money gives an illustration of how this causal relationship could work and highlights the little effect the climate factor is likely to have on companies. The article looks at fossil fuel companies and how a decrease of value as collateral of their assets could translate into higher interest rates for them, and how much money this could represent. Overall, the

Beyond this direct impact, the climate factor also sends a signal to market participants and companies. By introducing the climate factor, the ECB says that transition risks are not adequately factored through traditional means. It contributes to a broader narrative that environmentally harmful assets are not priced adequately by markets, thus further emphasizing their riskiness and the need to move away from them. This impact could be significant but is hard to quantify.[12]

## III. Improving the climate factor

Despite being an important step in the right direction, there is still room for improvement for the climate factor.

### ***Increased transparency***

Transparency around the climate factor is essential. Market participants and other observers (including civil society organizations and members of parliament) need to be able to understand this new measure and hold the ECB accountable. The guidelines published by the ECB give good indications but there are still some areas where transparency is lacking.

As part of the process, the Governing Council sets two key parameters every year which impact the strength of the factor. These decisions are said to be "informed" by some set criteria. However, it is unclear how much leeway the Council will have in determining these parameters in the end, and if these parameters will be made public. Additionally, the climate score which underlies the issuer-specific stressor was never detailed by the ECB.[13]

More problematically, it appears that the climate factor of each asset will not be made public. If this is confirmed, the ECB should explain the decision to keep this information hidden. Indeed, the ECB already publishes the list of marketable assets eligible as collateral and the haircut for each asset.[14] Haircuts give an indication of how risky the ECB considers the asset to be according to traditional standards. This begs the question of why things should be different for the climate factor.

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effect on the companies was believed to be marginal. This conclusion is shared by ABN.AMRO's study which argues that the measure would result in a negligible 0.1bps increase in bond yields.

[12] In a research paper from 2024, Antoine Ebeling highlights for example that ECB announcements on green monetary policy have an effect on green stock prices.

[13] Dafermos et al (2023) attempt to replicate the ECB climate score based on the available information. Still the authors recognize that their replica is based on several assumptions and that information is missing including the weight given to each sub-score.

[14] European Central Bank, Eligible assets: download area, Accessed 09 March 2026.

**Recommendation 1**
Make the climate factor of assets public, similarly to what it already does for haircuts.

**Recommendation 2**
Publish detailed information related to the underlying components of the climate factor, such as the full methodology for the climate score of companies and the additional parameters decided by the Governing Council.

***Automatically calculated***

The climate factor of the assets will only be calculated once a year.[15] Assets becoming eligible between two annual updates will be assigned the median climate factor of their corresponding asset type – bond, commercial paper, or medium term note. For example, all corporate bonds becoming eligible between updates will have the same climate factor: the median factor of corporate bonds.[16] This leads to a misrepresentation of climate-related risks. Assets which are riskier than others will be given a better climate factor than they should for up to 12 months. On the contrary, assets with little to no transition risks will face a higher penalty than they should.

Another serious issue with this is that some short-term assets may never even have a personalized climate factor: if they become eligible after the last update but reach maturity before the next annual update. This is particularly problematic considering the scope of the climate factor covers commercial papers which are short-term by definition. For instance, about 30% of eligible assets in scope had a maturity of less than a year on February 26th, 2026.[17]

Calculating the climate factor of each asset only once a year is a significant design flaw that could be easily corrected. Eligible assets issued by corporations already in the system could have their factor calculated automatically when entering the pool of eligible assets. Both sector-specific and issuer-specific stressors will already be known, the only change would be the asset-specific component (i.e. the maturity) which is readily available to the central bank. Once a year, the ECB could review these two

[15] European Central Bank, Guidelines (EU) 2026/[XX] of the European Central Bank of 22 January 2026 amending Guideline (EU) 2015/510 on the implementation of the Eurosystem monetary policy framework (ECB/2014/60).
[16] Similarly for medium term notes and for commercial papers.
[17] On 26th February 2026, the ECB's public list of marketable eligible assets had 4,840 bonds, medium term notes and commercial papers issued by non-financial corporations (number of assets in scope of the measure). Out of these, 1,435 assets had a maturity of less than 12 months. That represents 29,65% of assets in scope.

stressors to account for any significant changes (e.g. a company with new decarbonization targets). At the same time, the Governing Council could set the additional parameters needed for the calculations. All of these could then be used for the automatic calculations of the climate factor until the next update.[18]

The median climate factor should only be used in the rare case of an asset issued by company and/or from sector which has not yet been assessed in the last 12 months.

**Recommendation 3**
Calculate automatically the climate factor of each asset. The use of the median climate factor should only be a last-resort measure when data on the sector or the corporation issuing the assets are unavailable.

***Addressing the carbon bias***

Finally, it can be argued that the climate factor is too conservative and risk-focused, and as a result does not penalize assets tied to environmentally harmful activities enough. Over the years, the ECB collateral framework was accused of indirectly supporting carbon intensive companies by granting their assets eligibility and relatively low haircuts.[19,20] As such, civil society organizations and experts recommended excluding some inherently harmful assets – such as those linked to fossil fuel expansion – from the pool and adjusting the haircuts of other carbon intensive ones.[21,22]

With the climate factor, all carbon intensive assets will remain eligible but their value as collateral will decrease. However, it is not clear if the penalty incurred will be strong enough to make these assets worth less than others in the pool and, ultimately, make banks rethink which assets to pledge as collateral (and by extend, to buy).

Short-term assets tied to harmful activities may also not be adequately penalized. Indeed, the maturity of the asset is a determinant criterion for the climate factor. As a result, carbon intensive assets with very short maturity may avoid a heavy penalty. This is problematic as short-term assets can still contribute to a corporation's ability to fund harmful activities. The ECB should give less importance to maturity than the other

[18] These parameters could also be updated before the end of 12-month period if the Governing Council deems a change necessary.
[19] The benefit of eligibility is detailed in Mésonnier J. et al, The Interest of Being Eligible, 2017.
[20] Economist Intelligence Unit, ECB collateral policy threatens EU's path to net zero, May 2024.
[21] Reclaim Finance and Urgewald, Collateral damage: Ending the ECB's support to fossil fuel companies, April 2024.
[22] Dafermos Y. et al, Broken promises: the ECB's widening Paris gap, July 2023.

components of the climate factor and ensure that short-term assets linked to destructive activities, such as fossil fuel expansion, are strongly penalized.[23]

**Recommendation 4**
Assess the impact of the climate factor on the use of assets tied to particularly environmentally harmful activities - such as fossil fuel expansion – as collateral. Based on this assessment, adjust the climate factor to reflect environmental harm, including by lowering the importance of maturity.

**Recommendation 5**
Consider the exclusion of specific assets from the pool of eligible assets.

## IV. Extending the factor

Beyond the improvement of the climate factor as currently defined, the ECB should investigate how to extend its perimeter. The climate factor only applies to a small portion of the assets pledged as collateral in the Eurosystem – less than 5% of the assets pledged as collateral. Extending the climate factor to other asset classes, albeit with some adjustments, should be a priority.

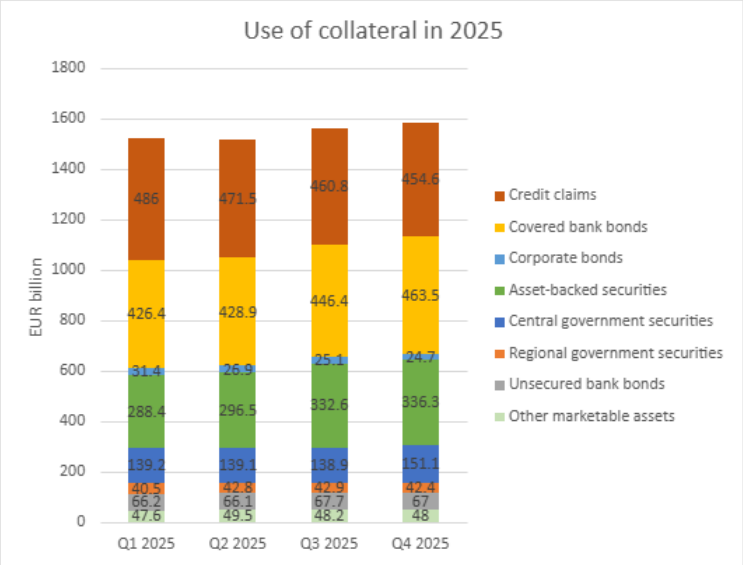


Figure 2: Use of collateral in 2025
Based on data published online by the ECB.
EUR billion, after valuation and haircuts, average of end of month data over each quarter.

[23] For reference, between July 2024 and March 2025, 117 short-term assets issued by companies expanding the exploration and production of oil and gas became eligible as collateral according to a study by Reclaim Finance and Urgewald.

***Introduction to credit claims***

Banks use credit claims significantly to access ECB financing: in the last quarter of 2025 credit claims represented around 29% of collateral pledged (see figure 2). Extending the climate factor to cover this type of asset should therefore be a priority and may already be on the mind of some central bankers.[24] The extension would require some adjustments as credit claims are substantively different from the assets in the scope of the measure.

Credit claims, or bank loans, are the main type of non-marketable assets – assets not listed on major exchanges – accepted as collateral by the Eurosystem.[25] Different types of loans can be accepted as collateral (regular loan, syndicated loan etc.).[26] Debtors[27] of these permissible loans are also varied: public sector entities, non-financial corporations, international and supranational institutions (such as multilateral development banks).

The ECB does not publish a list of eligible credit claims as it does for marketable assets. Instead, banks must make a request to register a credit claim to their national central bank. Banks are required to provide information about the loans they use as collateral as part of the registration process: this helps determine whether the credit claim is eligible and, if so, the haircut that should apply.[28] Once registered, a credit claim can be mobilized as collateral by the bank.

The ECB made some efforts to integrate climate risks into this process: climate risks have been added to the credit rating of assets, which helps determine the haircut applied. [29] However, considering climate risks though a credit risk lens only does not adequately represent the full extent of these risks notably due to the short horizon of credit rating analysis, compared to the long-term horizon of climate risks. This corroborates the call for an additional climate factor in the assessment of credit claims.

[24] For example, in the hearing of Banque de France's Governor François Villeroy de Galhau before the Finance Committee of the French Parliament (Assemblée nationale) on 18 February 2026 (recording available in French only), the Governor discussed the climate factor and expressed an interest in extending the climate factor to credit claims.
[25] The framework also allows for fixed-term deposits from eligible counterparties, and non-marketable retail mortgage-backed debt instruments. However, these do not seem to be commonly used as collateral in practice.
[26] For full list of permissible loan types, see Annex 16.7a of Collateral management in Eurosystem credit operations: Information for Eurosystem counterparties.
[27] To simplify, this paragraph will only mention debtor, but in reality, this applies to debtors and/or guarantors of the loans.
[28] European Central Bank, Collateral management in Eurosystem credit operations: Information for Eurosystem counterparties, January 2026.
[29] Piloiu A. Reichmann O. and Resch F., Credit Ratings: How the ECB strives to properly account for climate risks, November 2025.

***A climate factor for credit claims***

The climate factor announced in 2025 was designed for marketable assets issued by non-financial corporations and, as such, would require adjustments to fit credit claims. The climate factor is constructed on data from three levels: the maturity of the asset, the non-financial corporation issuing the asset (i.e. the issuer), and the sector of activity of the issuer. For credit claims, this means focusing on the maturity of the loan, the debtor – the entity which received the loan from the bank – and the sector of activity of the debtor.

Some of the data required to replicate the climate factor is easily accessible to central banks. Information about the maturity of the loan is already included in the registration process of the credit claim. Data on the sector of activity of the debtor, although not readily accessible, should be retrievable. Banks should have acquired information about the debtor when lending the money to them so the ECB could simply require this information as part of the registration process of credit claims.

However, climate-related data on the debtors may be more difficult to gather and be very dependent on the type of debtor. Data on big corporations or public entities should be relatively easy to find. The same cannot be said for small corporations – especially with the reduced scope of the Corporate Sustainability Reporting Directive.

National central banks could hypothetically step in and fill the data gap on smaller corporations. To do so they could draw inspiration from the Banque de France's climate indicator which assesses climate-related risks of corporations based in France.[30] However, implementation across all companies and sectors is slow and difficult[31], and may not be feasible for all Eurosystem central banks. Consequently, it should be assumed that calculating a debtor-specific stressor to imitate the issuer-specific stressor of the climate factor will not be possible for a portion of the credit claims.[32]

A simplified climate factor should therefore be designed based on the sectoral data available. The maturity of the loan could also be considered but should be given significantly less weight. Maturity is already a key component of credit risk and, as such, is already integrated in the standard assessment of the credit claim and reflected in the haircut.

The ECB could either favor harmonization across credit claims and apply this simplified climate factor to all, or apply the simplified version only when climate-related data of the debtor cannot be retrieved. Both options have their merits, and the ECB should focus on

[30] Amadei J. Duterne H. and Gil P, The climate indicator: a tool to support companies in their climate transition, March 2026.
[31] For reference, Banque de France started to deploy the climate indicator in 2024. By 2027, it is expected to have only gathered information for sectors responsible for 60% of GHG emissions in France.
[32] As the ECB does not publish data on the types of credit claims used and their debtors, it is difficult to estimate how many credit claims would be affected by the lack of granular data.

implementing a climate factor, in a timely manner. Adjustments could be made at a later stage, if deemed necessary.

| Climate factor announced | Suggestions for credit claims |
|---|---|
| Use of a sector-specific stressor of issuer based on stress test of transition risks conducted by the ECB | Use of a sector-specific stressor of debtor based on stress test of transition risks conducted by the ECB |
| Use of an issuer-specific stressor based on decarbonization target, GHG emissions, disclosures of corporation behind the asset | Use of a debtor-specific stressor based on sectoral data depending on data availability |
| Integration of the maturity of asset | No integration of the maturity of loan or reduced weight in the factor |

Table 1: Adjusting the climate factor to credit claims

**Recommendation 6**
Extend and adjust the climate factor to credit claims by focusing on sectoral data to circumvent data availability issues.

***Other extension possibilities***

In addition to credit claims, the ECB should investigate how to extend and adjust the climate factor to other asset classes in its pool of eligible assets. More work should be conducted to determine the best way to extend the climate factor, but some ideas are already worth noting.

Covered bank bonds for example represent a high share of used collateral (see figure 2). There are two main options to add climate criteria to the assessment of covered bank bonds as collateral: looking at the underlying assets or at the bank issuing the asset. Covered banks bonds are usually backed by residential homes in each banks' region, so accounting for climate transition risks of the underlying assets would imply looking at the energy efficiency of houses.[33] This could have unintended negative consequences such as penalizing households with limited financial means. As such, some argue that the focus should instead be on the banks issuing these covered bonds. Covered bank bonds from banks whose practices show a lack of transition could be penalized, or even excluded.[34]

Climate criteria could also be applied to sovereign (national and regional) securities, which represent a smaller although non-negligeable part of used collateral. As penalizing

[33] For example, the Bank of England has adjusted its treatment of mortgages in its collateral framework to account for energy efficiency and flood risks.
[34] Erlandsson U. and Jarnmo J., Please shower before entering the pool, August 2025.

some sovereign assets may be difficult to accept, a green favoring factor could instead be considered. Securities tied to green projects of regional or national governments could be deemed less risky, as they contribute to the mitigation of and/or adaptation to climate risks.[35]

**Recommendation 7**
Investigate the possibility of extending the climate factor to other asset classes, with the aim to eventually include climate considerations for the entire pool collateral.

***From climate to nature?***
Another avenue of extension would be to enhance the factor by integrating measures of nature degradation and biodiversity loss. The ECB has expressed its commitment to consider nature as an equally important part of environmental concerns.[36] A more holistic approach would be beneficial as nature-related risks are too often overlooked, including by central banks. However, data is scarcer and the impact of activities on ecosystems is a complex phenomenon making it more difficult to implement measures. One avenue would be to start by identifying which activities are an inherent threat to ecosystems and biodiversity and penalize (or exclude) them.

## V. Concluding remarks

With the implementation of the climate factor in the collateral framework, the ECB is taking an important step forward in integrating climate change into its monetary policy. This long-awaited measure is the most substantial change to monetary policy since the favoring of greener assets in the asset purchase programs. It is therefore essential for the ECB not to miss the mark.

The ECB opted for a relatively complex methodology to account for climate transition with a three-tiered analysis: of the asset, the corporation issuing it and the sector of the corporation. As the first attempt to capture these risks in its collateral framework, the ECB should be expected to assess its approach and improve it when justified.

Based on our analysis, some improvements should already be considered. First, the ECB should ensure a high level of transparency of the factor itself, and how it is constructed. Second, the ECB should automatically calculate the climate factor of assets, rather than unnecessarily relying on proxies. Finally, the ECB should ensure that all assets tied to

[35] Dafermos Y., et al, Greening collateral frameworks, August 2022.
[36] European Central Bank, ECB advances climate and nature work after delivering on 2024-2025 plan, 16 January 2026.

environmentally harmful activities, such as fossil fuel expansion, are sufficiently penalized.

Furthermore, the ECB should work on expanding the climate factor to the rest of the collateral framework given the restricted scope of the announced measure. Although this will require adjustments to the climate factor, it is a necessary step to fully integrate climate change in the collateral framework. For example, implementing a climate factor on credit claims is feasible if the ECB is willing to circumvent data availability issues by relying on sectoral data. Other extensions should also be considered.

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**<u>Annex 1:</u> How to calculate the climate factor**

The uncertainty score is:

$$u_{i,j,s} = V_i \times E_j \times S_s$$

Where:

- $V_i$ is the asset-specific vulnerability, equal to the square root of the asset's residual maturity.
- $E_j$ is the issuer-specific exposure based on the climate score developed for the asset purchase programmes.
- $S_s$ is the sector-specific stressor based on the last available Eurosystem climate stress test.

Using the uncertainty score of the asset, the climate factor is calculated as follows:

$$CF(u_{i,j,s}) = a + (1 - a)\frac{1}{e^{u_{i,j,s} \times b}}$$

Where parameters $a$ and $b$ are set by the Governing Council. Parameter $a$ is informed by the expected negative impact on all sectors of climate risks and sets how low the climate factor can get. Parameter $b$ is informed by the median uncertainty score.