Annex 1 Scenario Outputs

How likely are multilateral development banks to need callable capital?

Implications for risk frameworks and lending capacity

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Disclaimer: this Annex contains background data to the above paper. The information has been included in the peer review process but has not undergone extensive editing or formatting.

Explanatory Notes

This annex includes output from the full scenario analyses for each of the MDBs using the cases as described in the main document as in the table below.

Name	Credit migration volatility	Sovereign LGD
100% growth (**GR1**)	100%	10%
200% growth (**GR2**)	100%	10%
PCT strong (**PS**)	50%	10%
PCT weak (**PW**)	100%	10%
No PCT (**NP**)	100%	45%
Volatile No PCT (**VNP**)	200%	45%

Graph Descriptions

The two box plots for each scenario show the evolution of the model over the 10 year period. The left hand chart showing the variation in capital position relative to today (i.e. Year 0), the right hand chart showing the change in the loan portfolio.

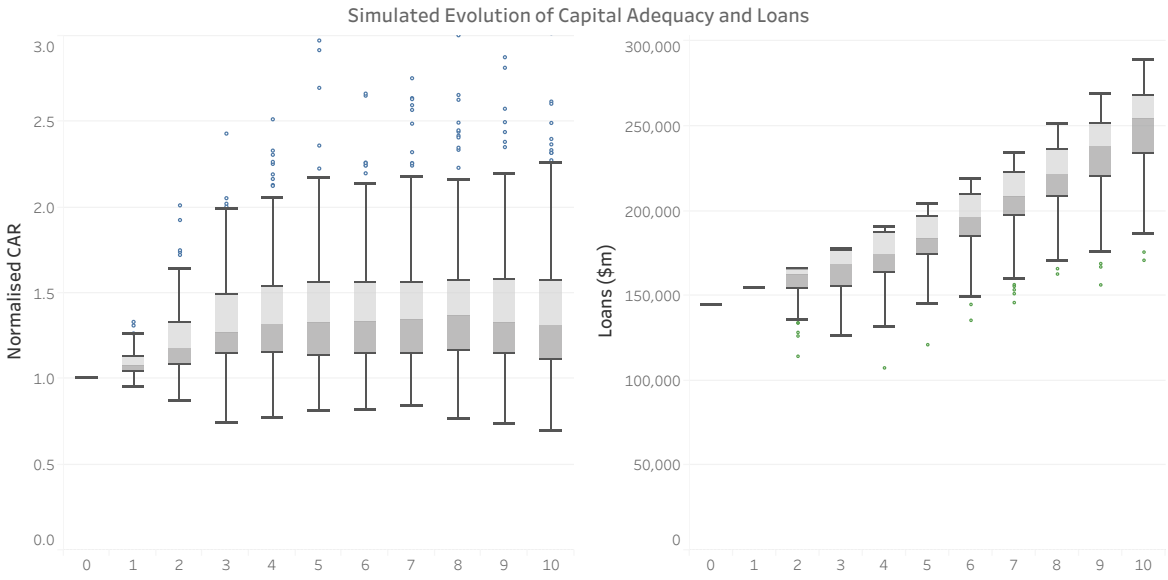
The lower histogram shows the probability of the capital ratio falling to a percentage of the starting value.

Important Notes

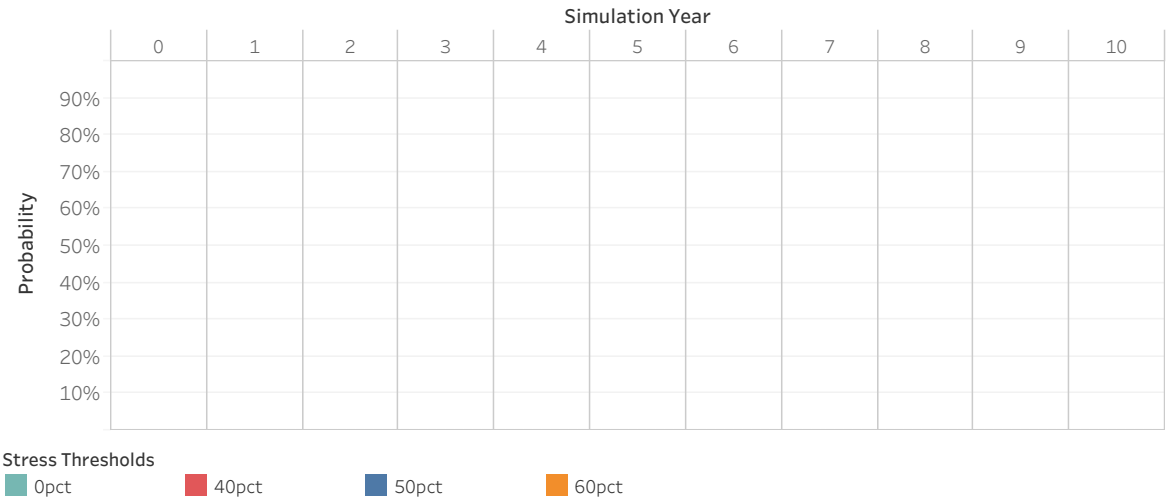
1. The first two models (GR1, GR2) give the MDB a growth imperative in the model. Lending in future periods anticipates income, incorporates losses, and looks 1 year ahead to deploy new loans. It does not explicitly manage for capital.
2. The construction of the subsequent 4 models focuses on a target capital position and adjusts lending accordingly. This may lead to loan book shrinkage which could contradict the development mission of the MDB. Managing for capital in the model introduces a convexity effect which prioritises stability over growth.
3. AIIB is unusual as it is highly capitalised and not in a steady state of growth. The graphs are included for completeness, although its capital ratio is sufficiently high that it could expand lending significantly without experiencing distress. For that reason, the charts on stress have been omitted.
4. As the IFC only has private sector operations, the scenarios PW and NP are effectively the same.
5. PCT has unusual feedback effects on the capital position. As the LGD used in the model for PCT losses is 10% compared to the non-PCT LGD of 45%, a loan write off in PCT cases has the counterintuitive effect of raising the capital ratio.
6. It is recommended to focus on the inner quartiles and median of the box plots to get a sense of the overall growth and capital impact of a scenario.

ASIAN DEVELOPMENT BANK

Scenario: GR1

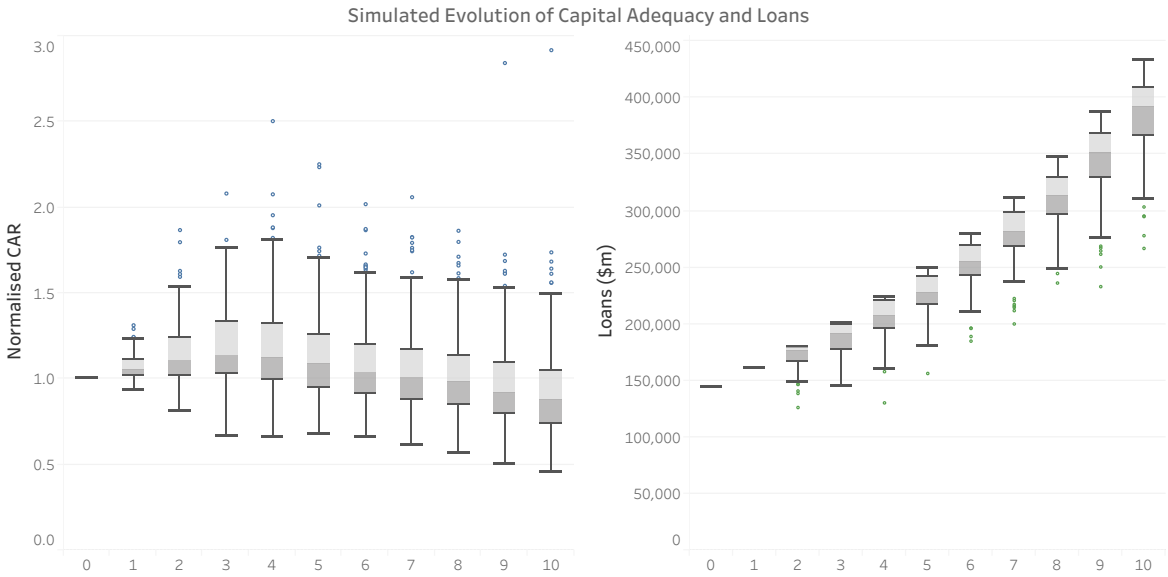


Stress probability

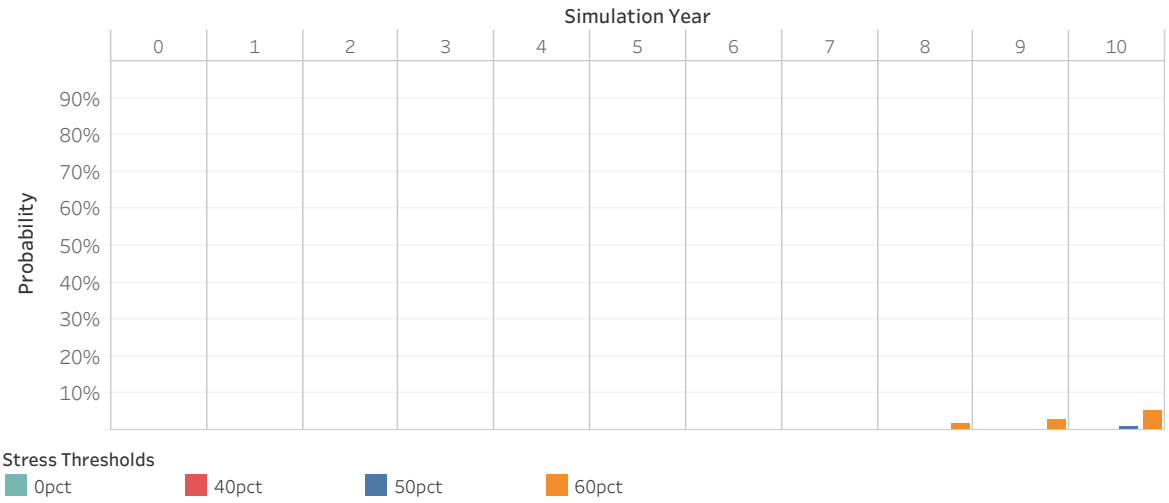


ASIAN DEVELOPMENT BANK

Scenario: GR2

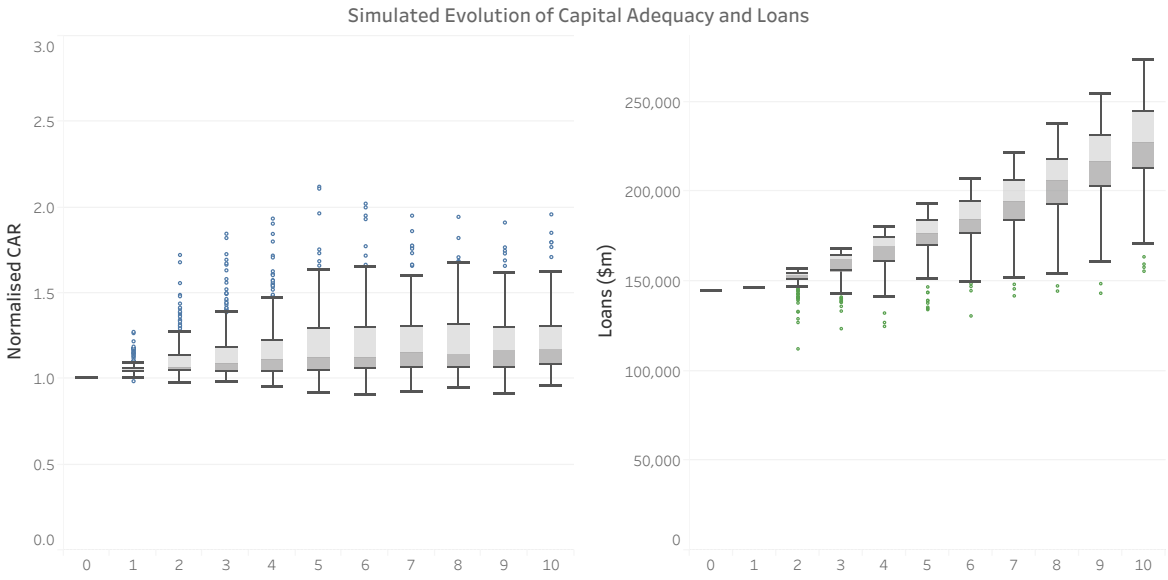


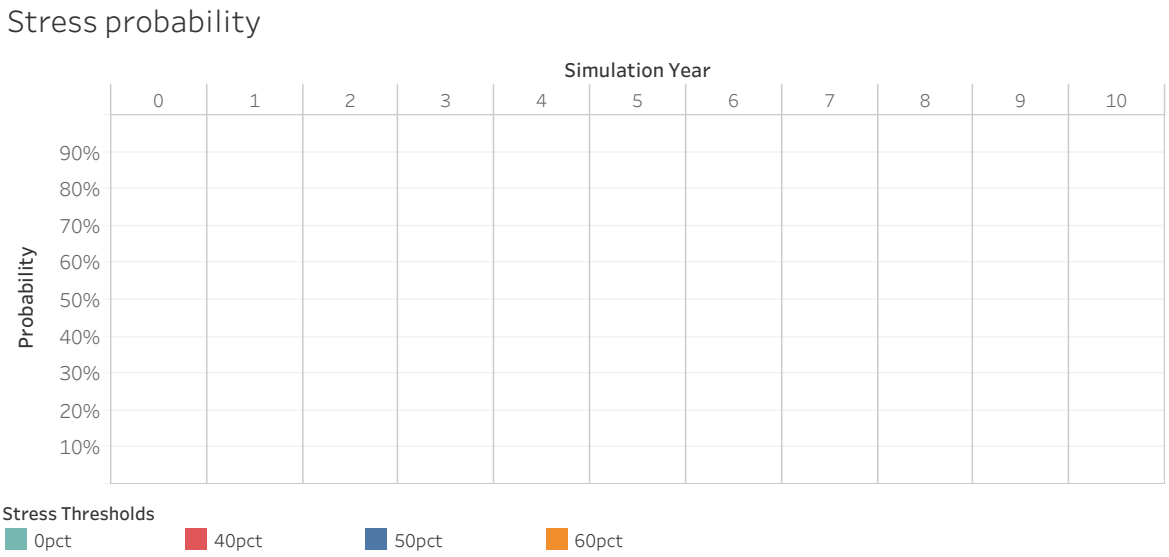
Stress probability



ASIAN DEVELOPMENT BANK

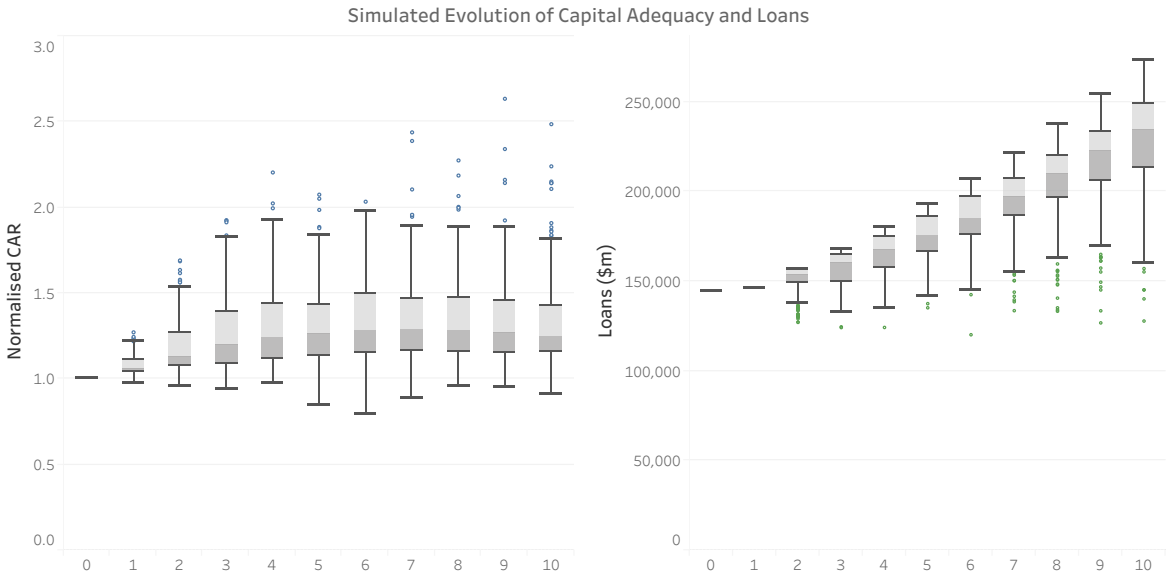
Scenario: PS



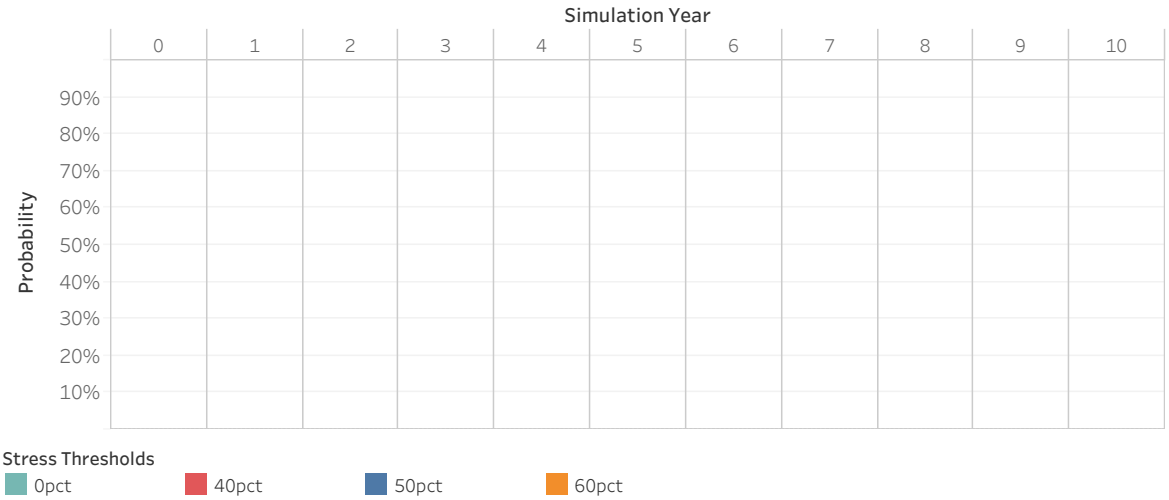


ASIAN DEVELOPMENT BANK

Scenario: PW

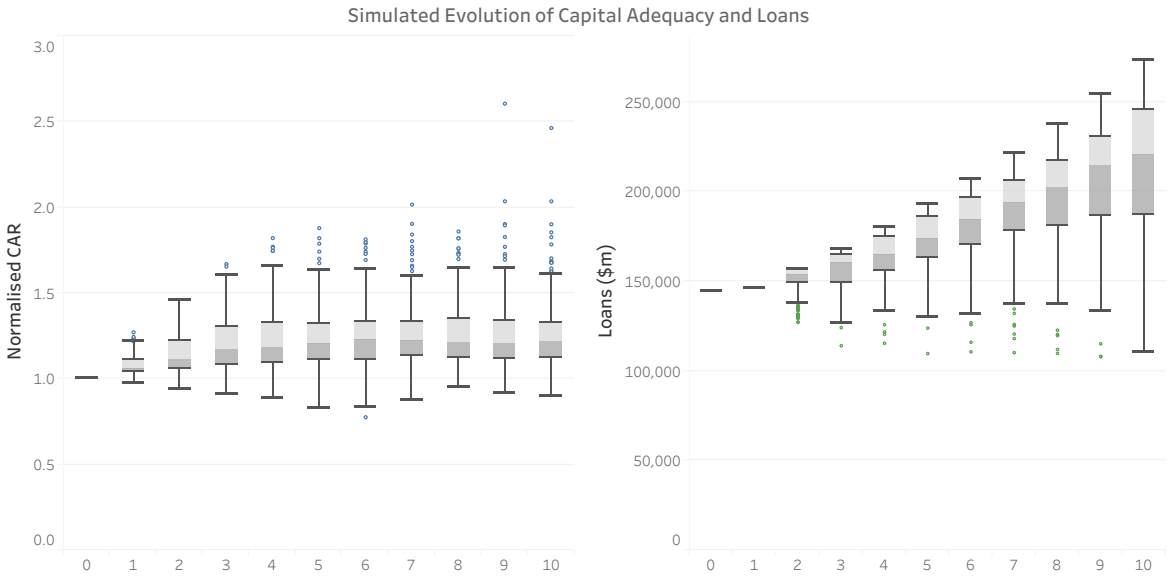


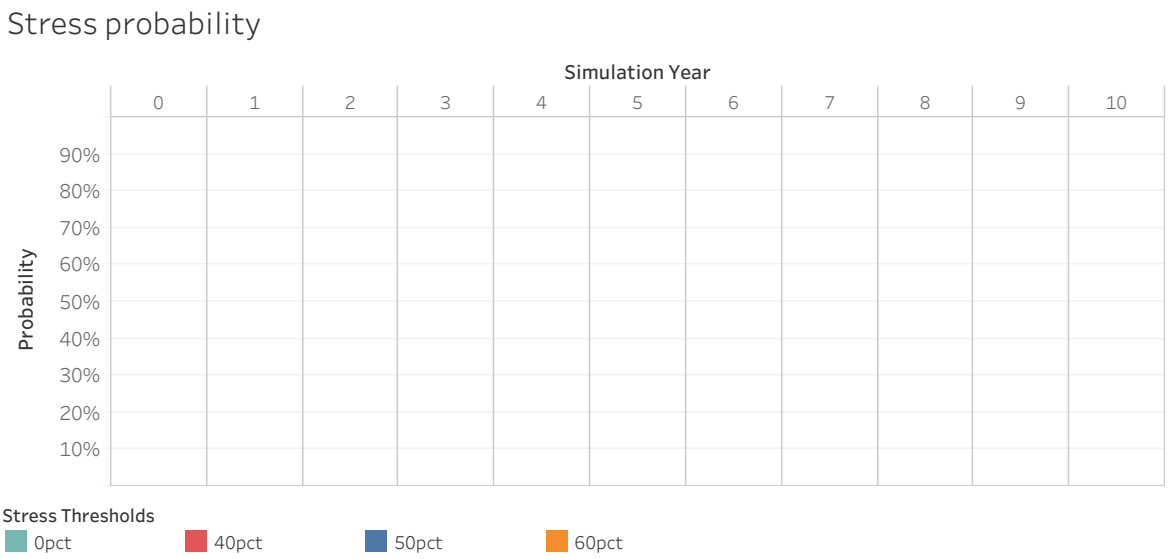
Stress probability



ASIAN DEVELOPMENT BANK

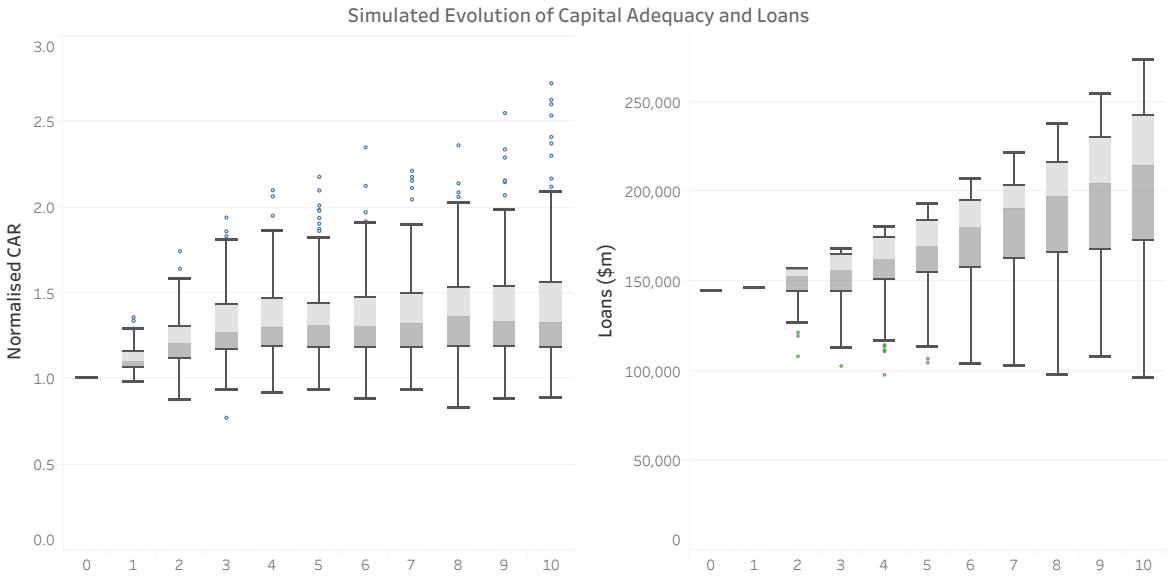
Scenario: NP



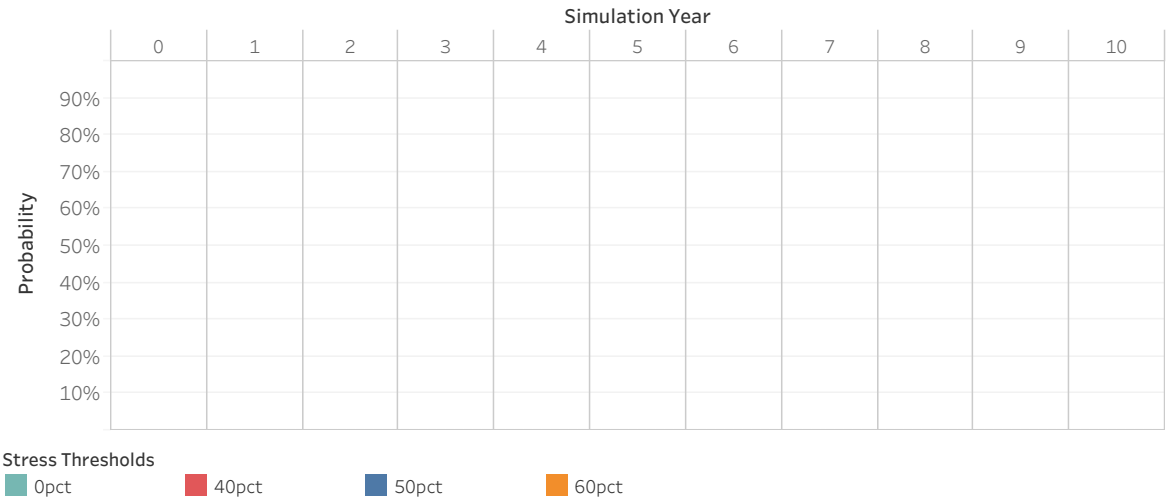


ASIAN DEVELOPMENT BANK

Scenario: VNP

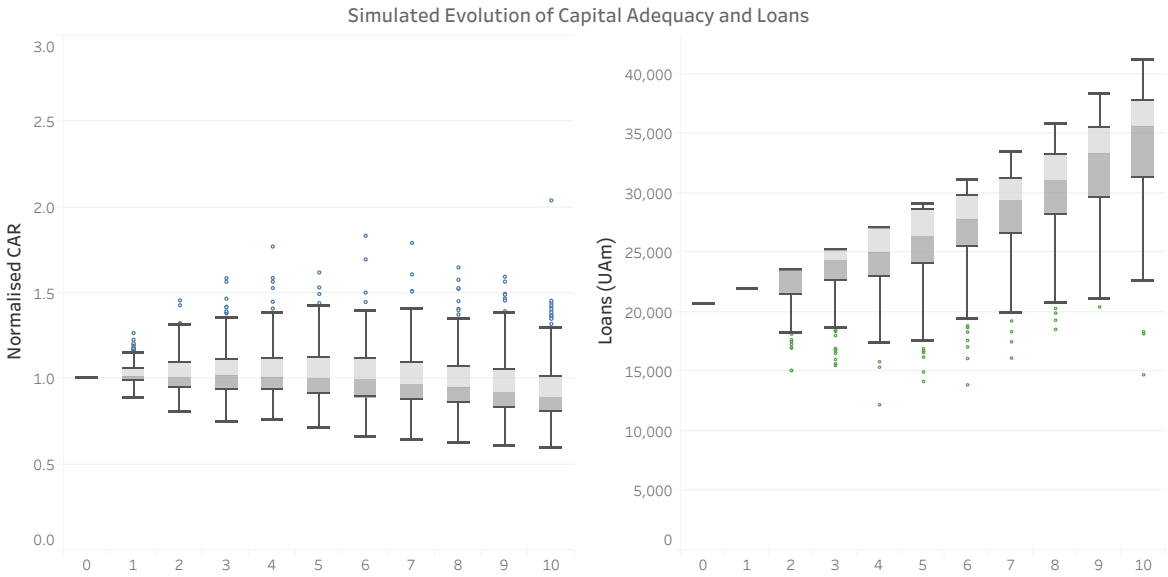


Stress probability



AFRICAN DEVELOPMENT BANK

Scenario: GR1



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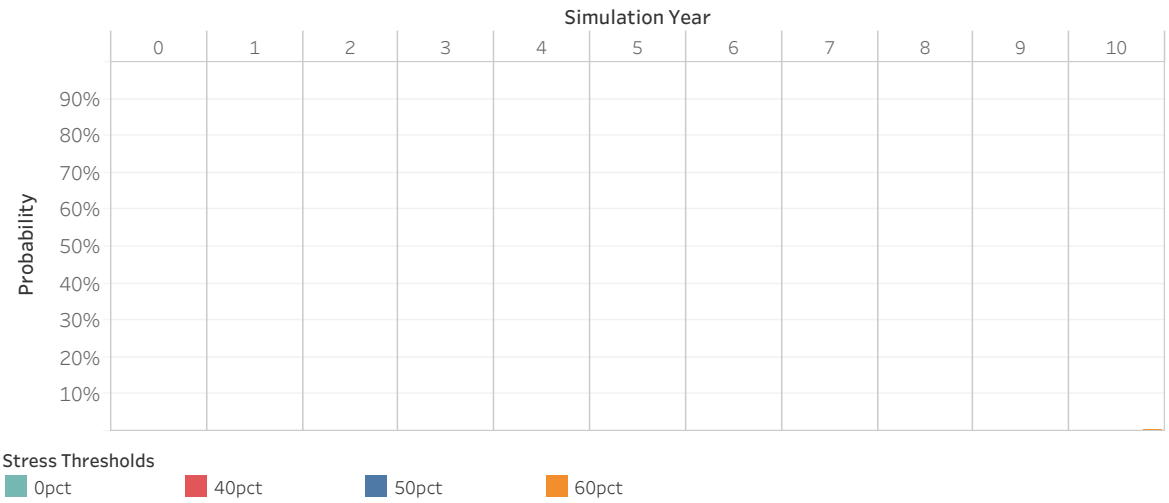
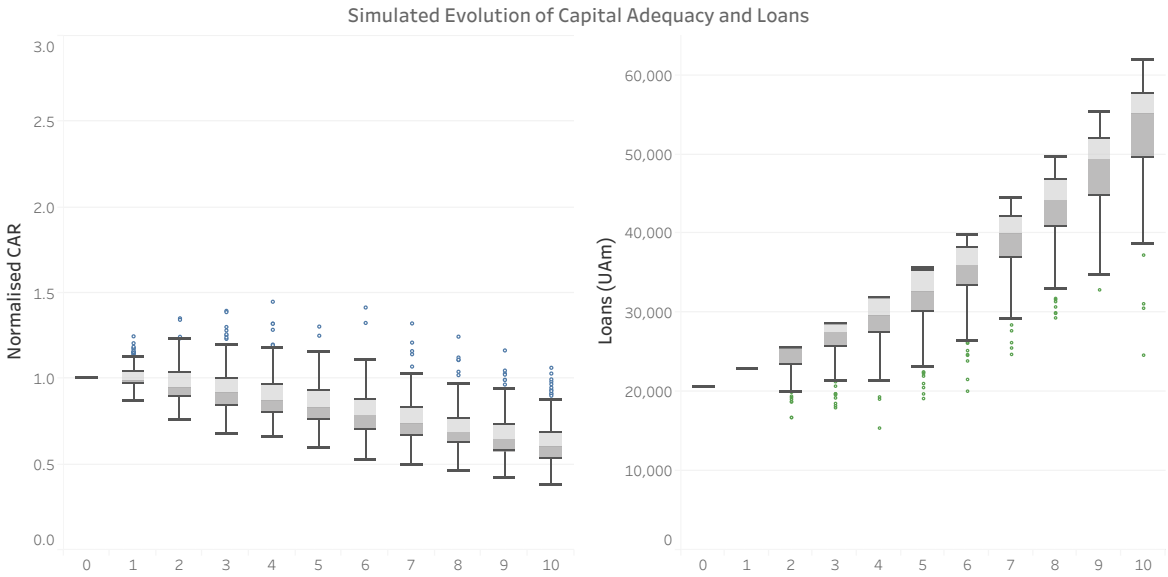
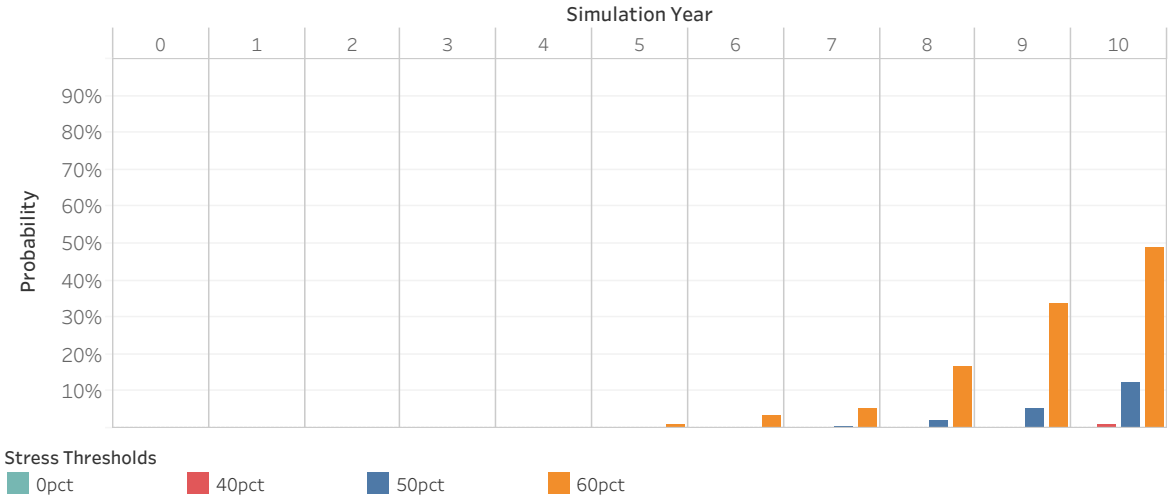


AFRICAN DEVELOPMENT BANK

Scenario: GR2

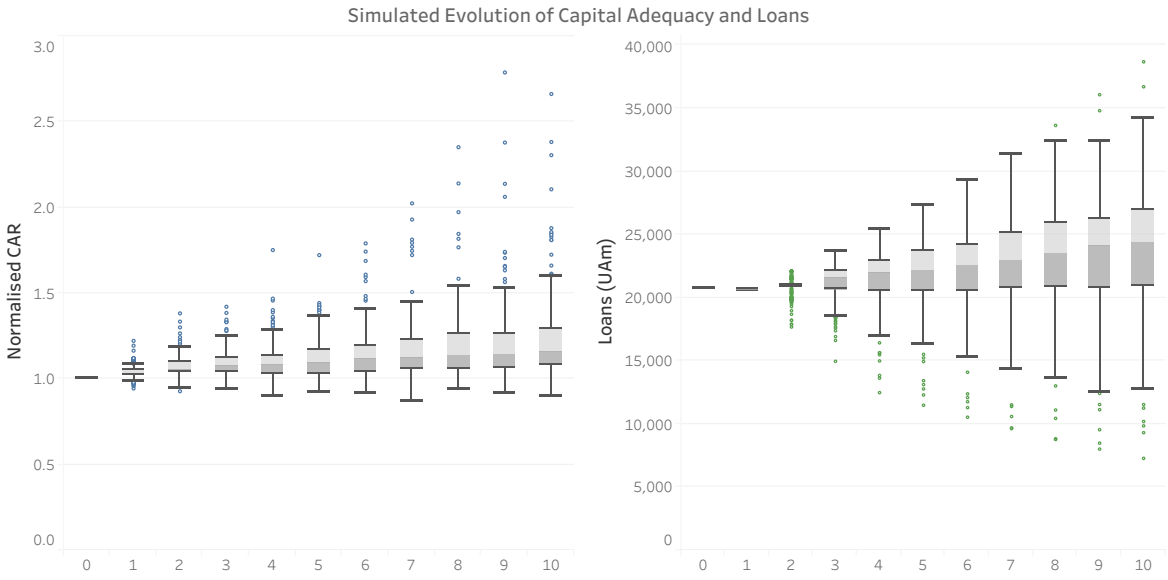


Stress probability



AFRICAN DEVELOPMENT BANK

Scenario: PS



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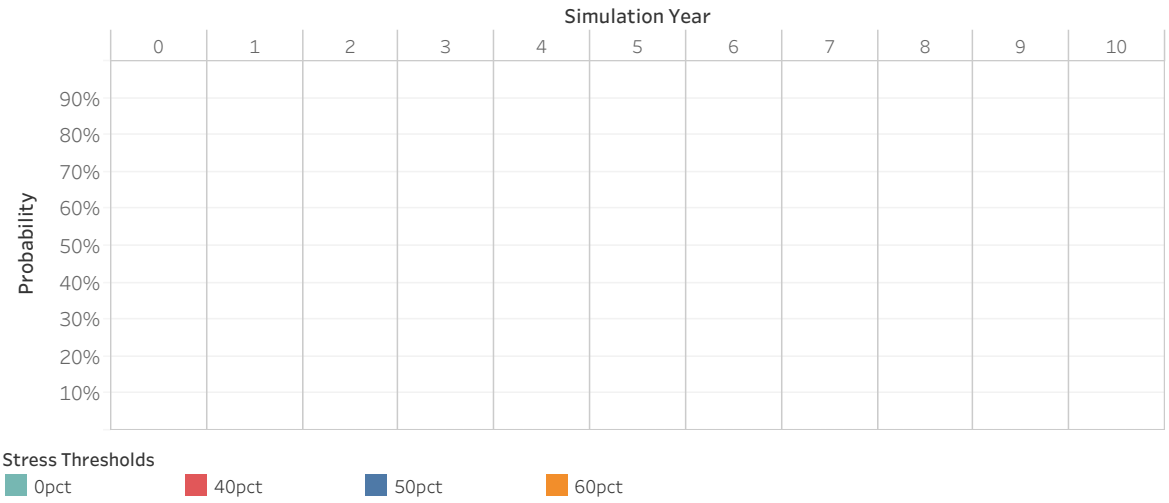
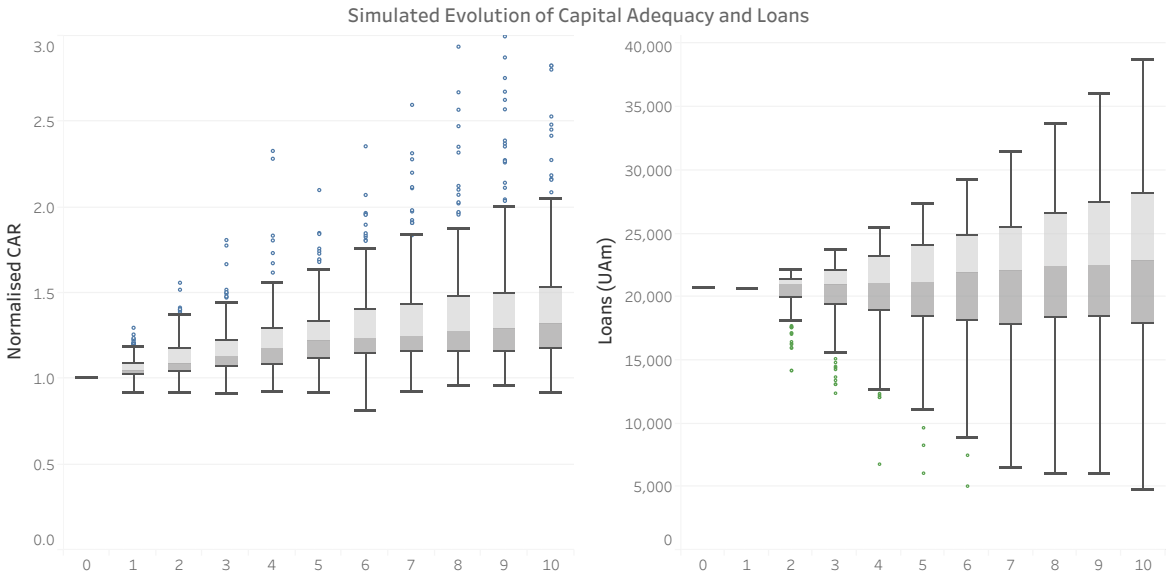


AFRICAN DEVELOPMENT BANK

Scenario: PW



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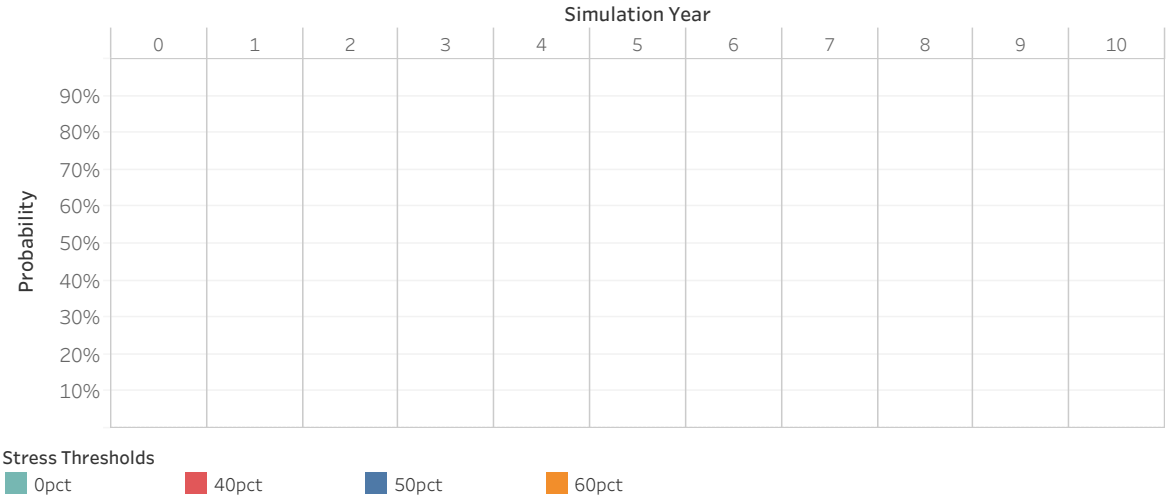
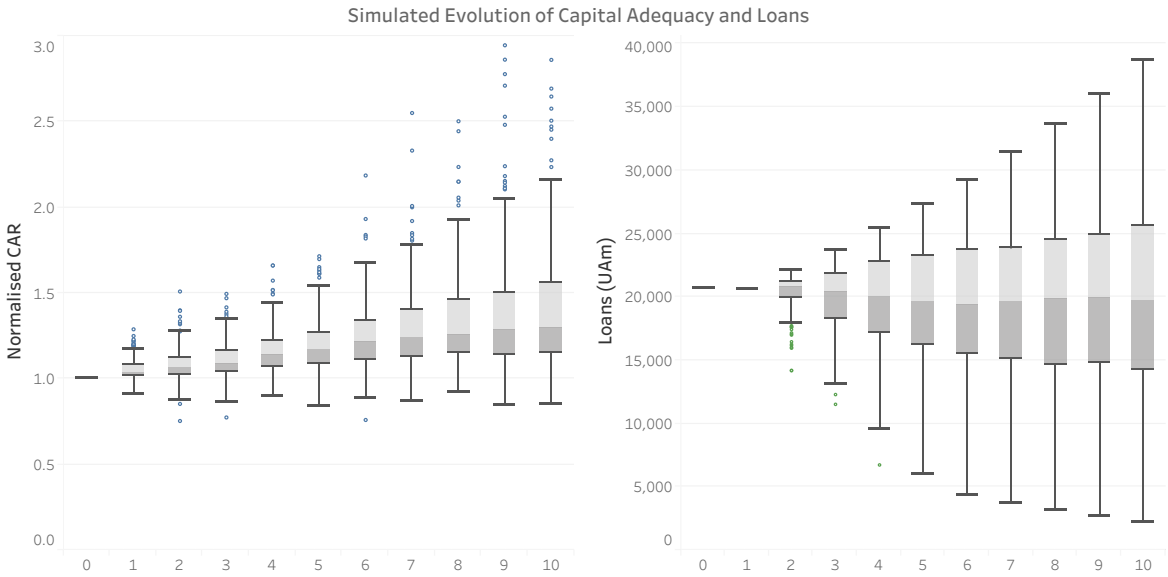


AFRICAN DEVELOPMENT BANK

Scenario: NP



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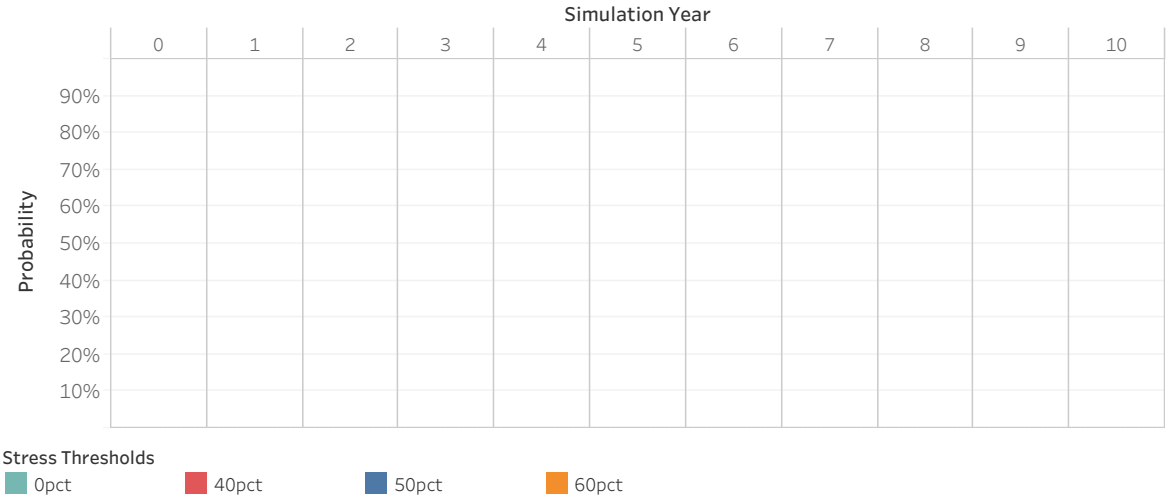
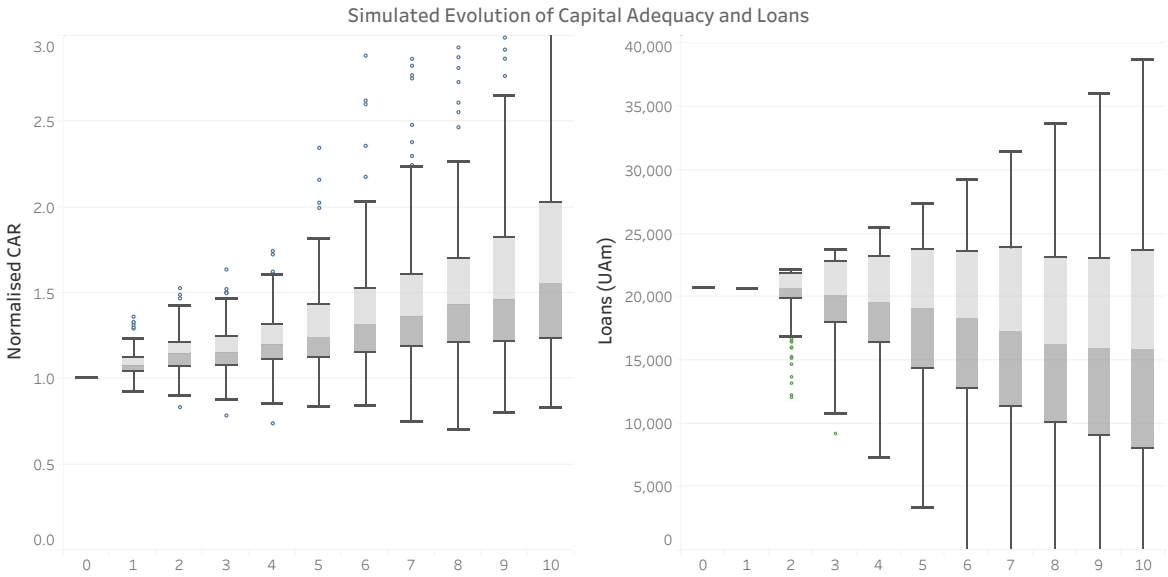
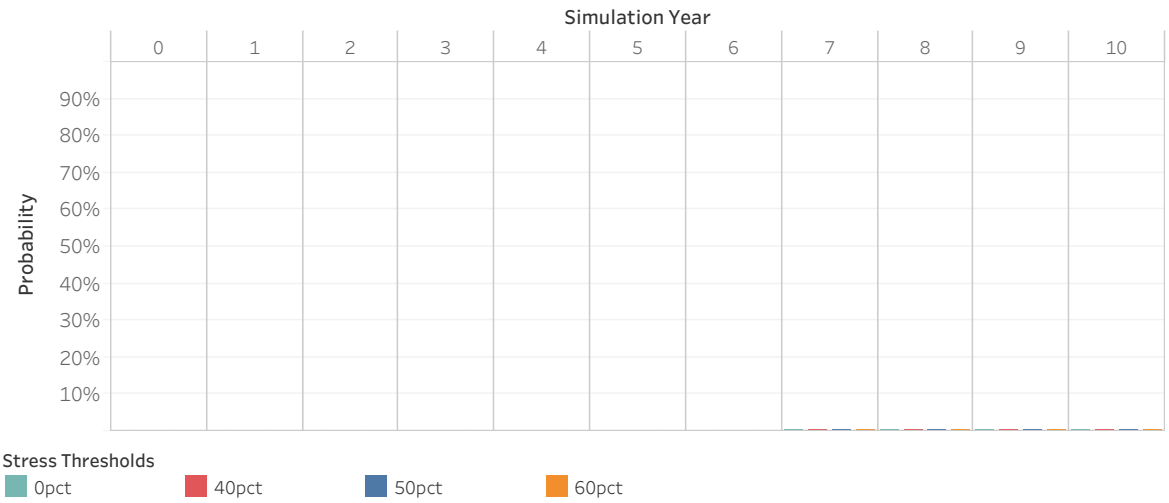


AFRICAN DEVELOPMENT BANK

Scenario: VNP

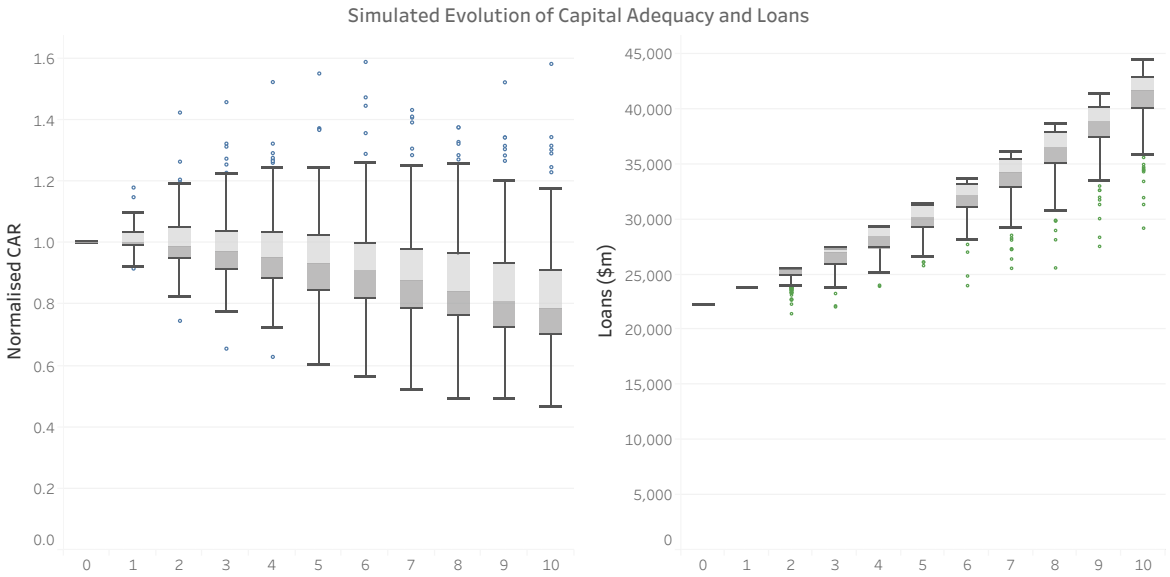


Stress probability



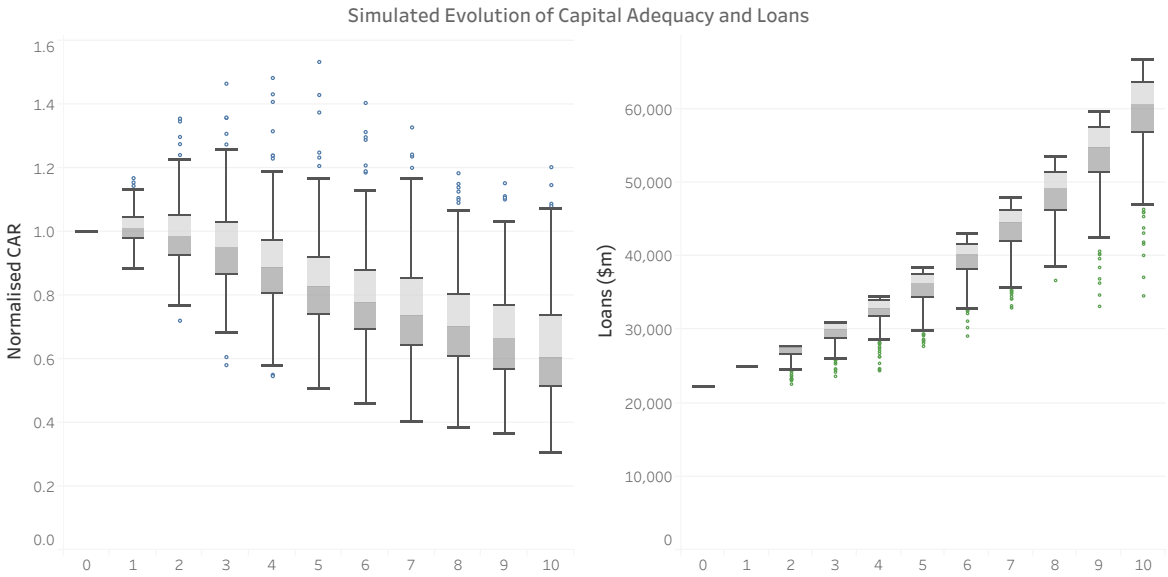
ASIAN INFRASTRUCTURE INVESTMENT BANK

Scenario: GR1



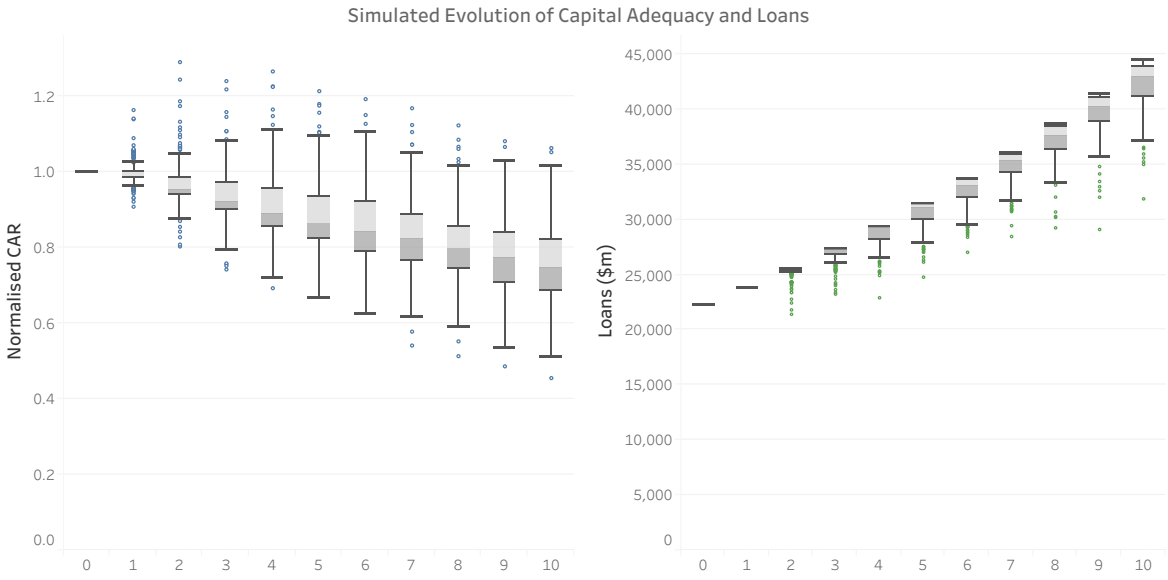
ASIAN INFRASTRUCTURE INVESTMENT BANK

Scenario: GR2



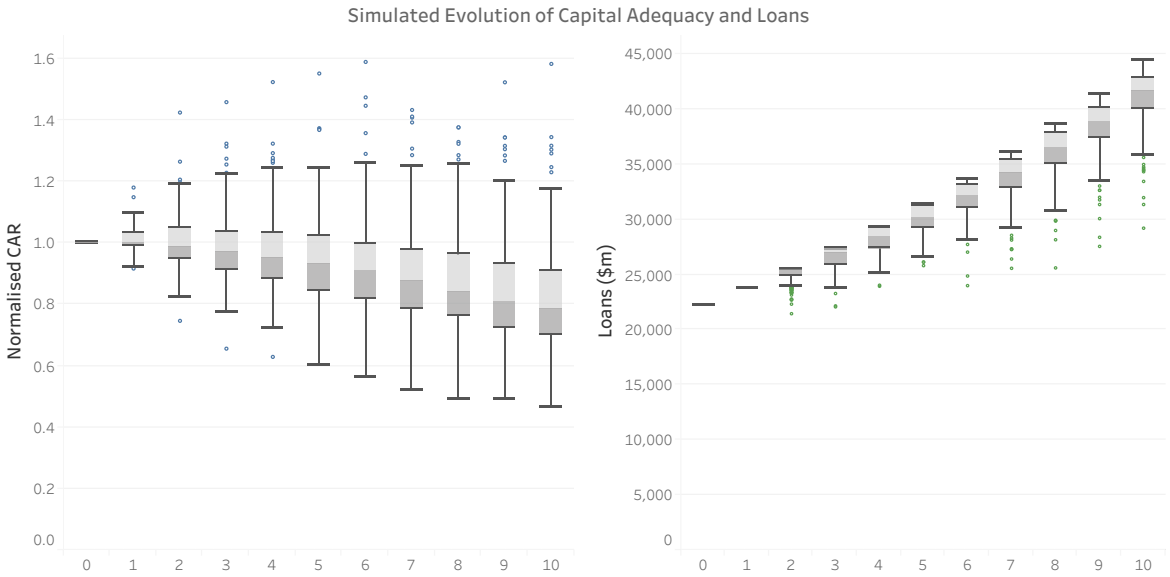
ASIAN INFRASTRUCTURE INVESTMENT BANK

Scenario: PS



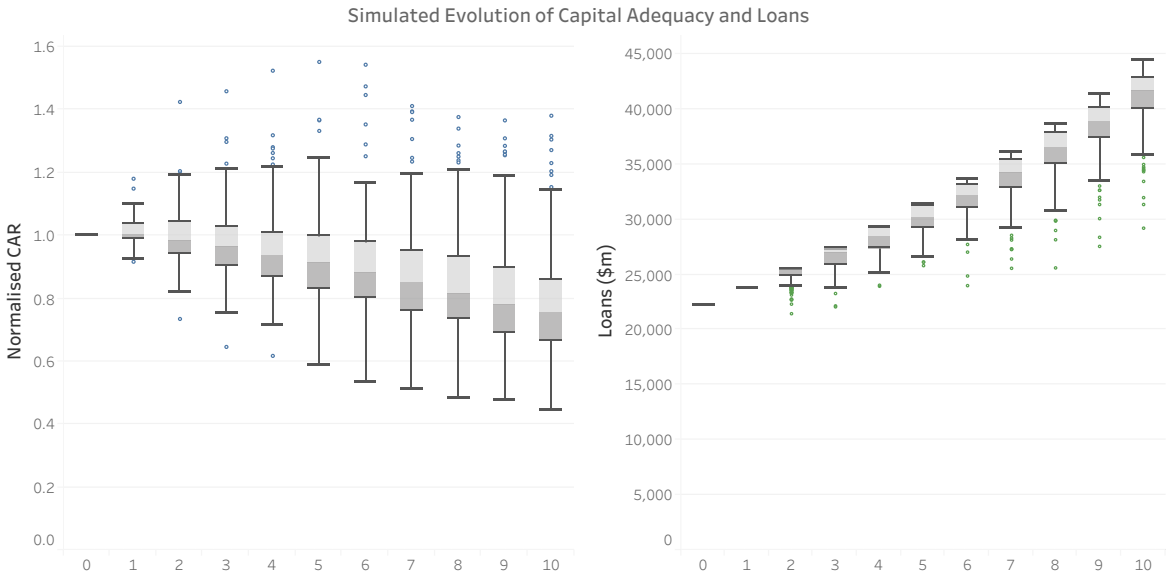
ASIAN INFRASTRUCTURE INVESTMENT BANK

Scenario: PW



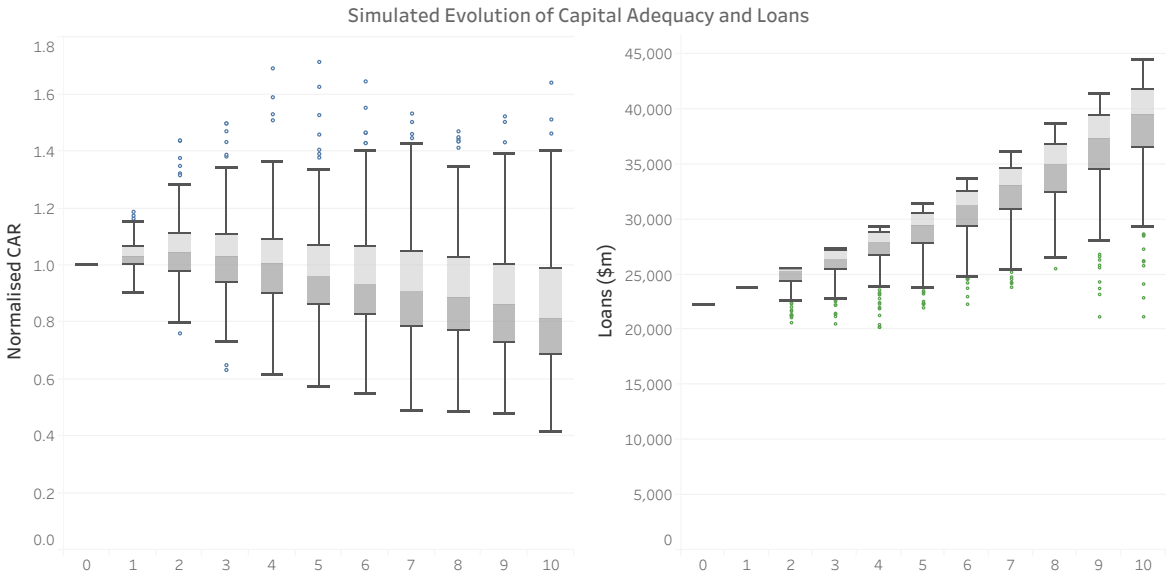
ASIAN INFRASTRUCTURE INVESTMENT BANK

Scenario: NP



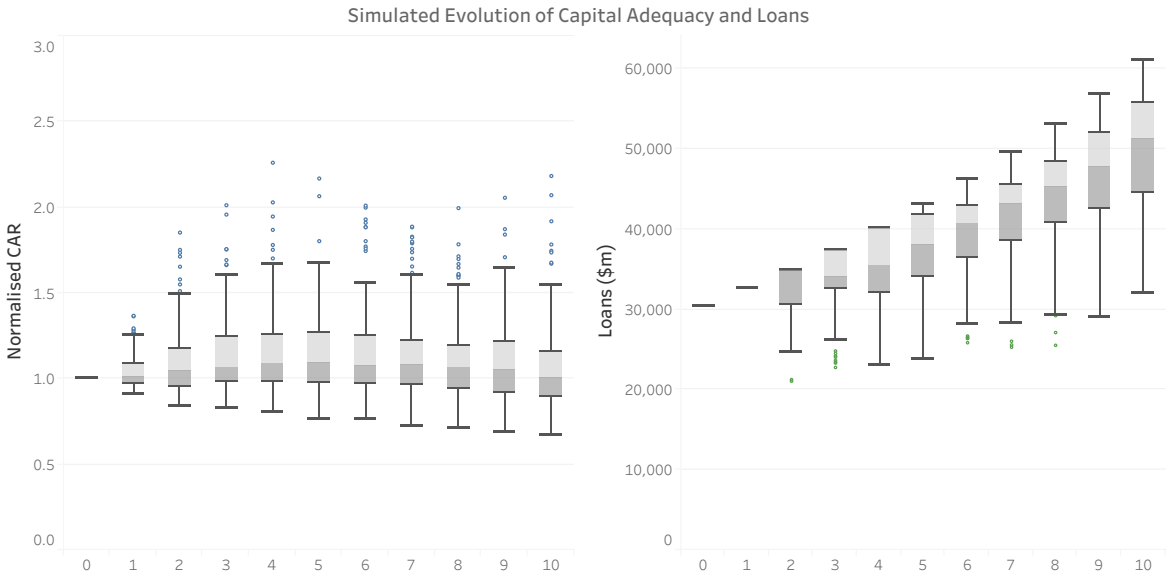
ASIAN INFRASTRUCTURE INVESTMENT BANK

Scenario: VNP

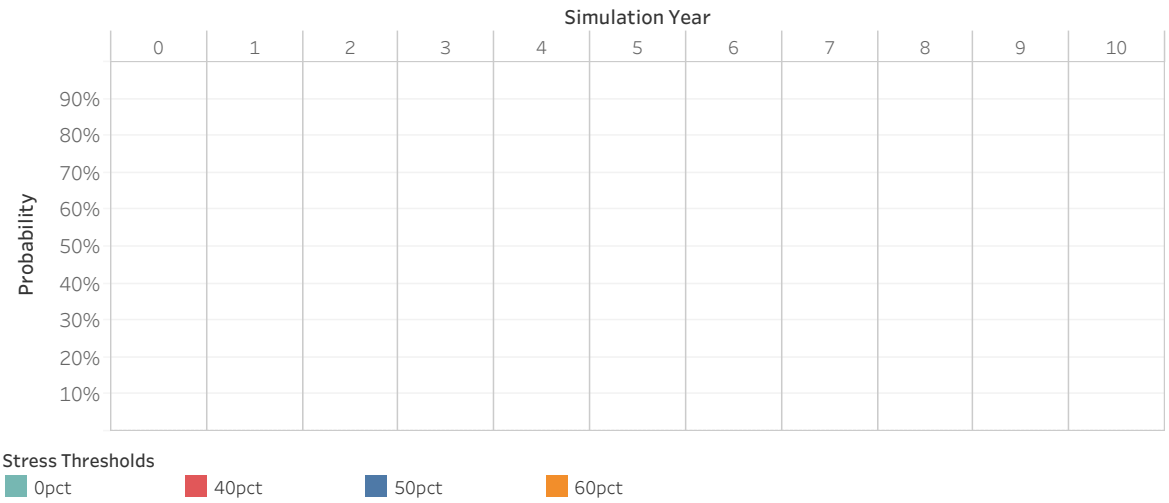


CORPORACIÓN ANDINA DE FOMENTO

Scenario: GR1

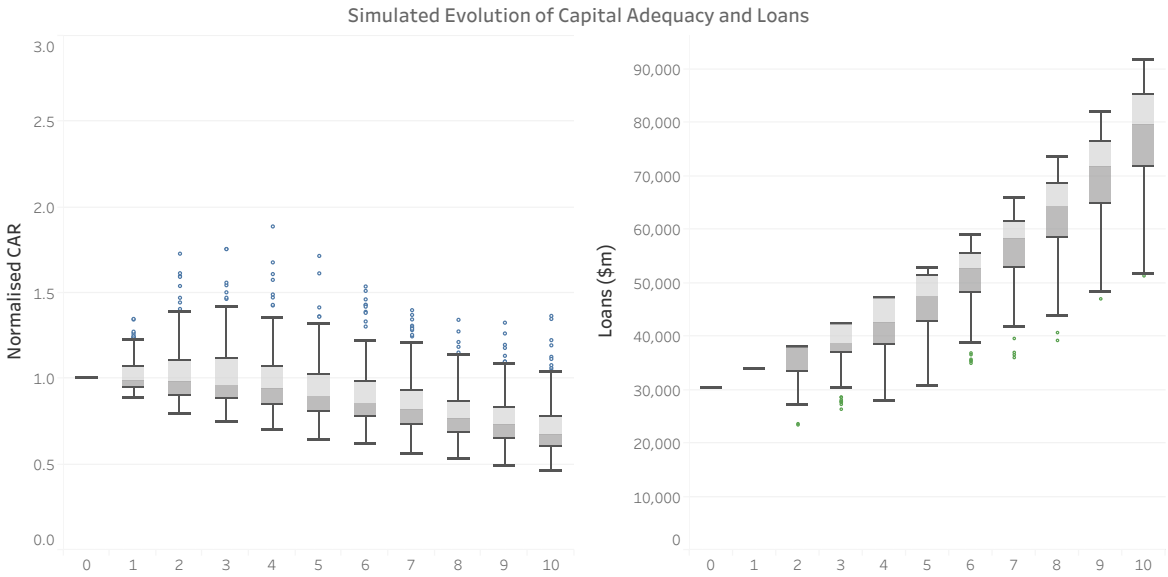


Stress probability

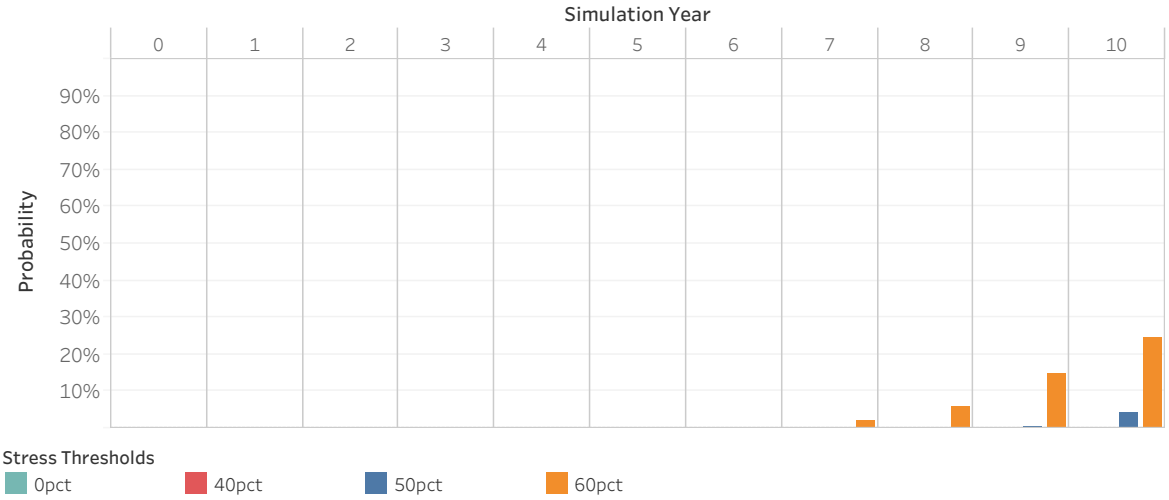


CORPORACIÓN ANDINA DE FOMENTO

Scenario: GR2

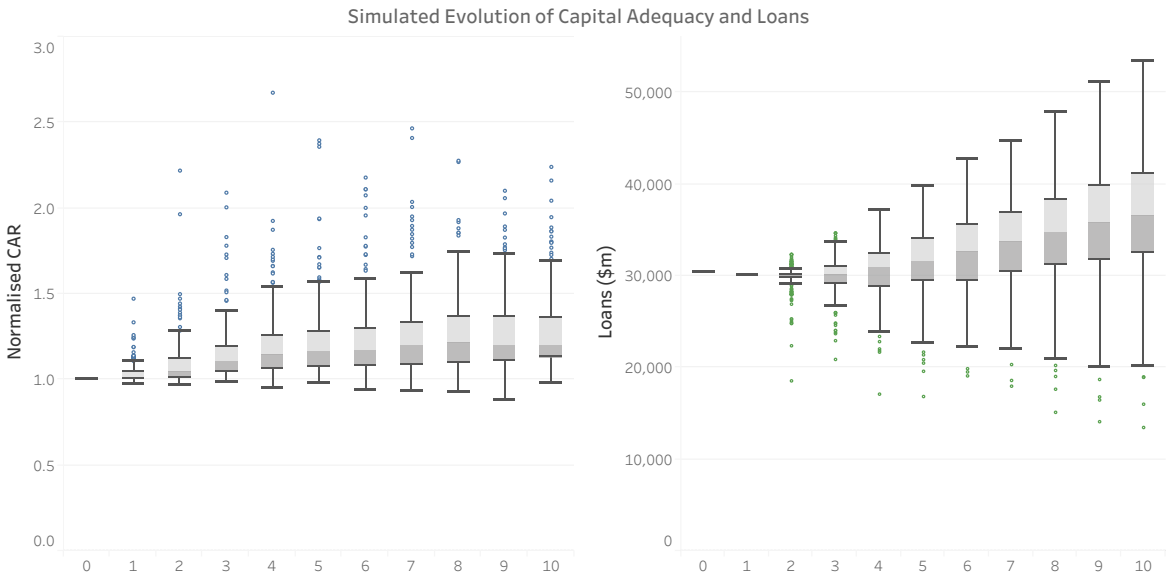


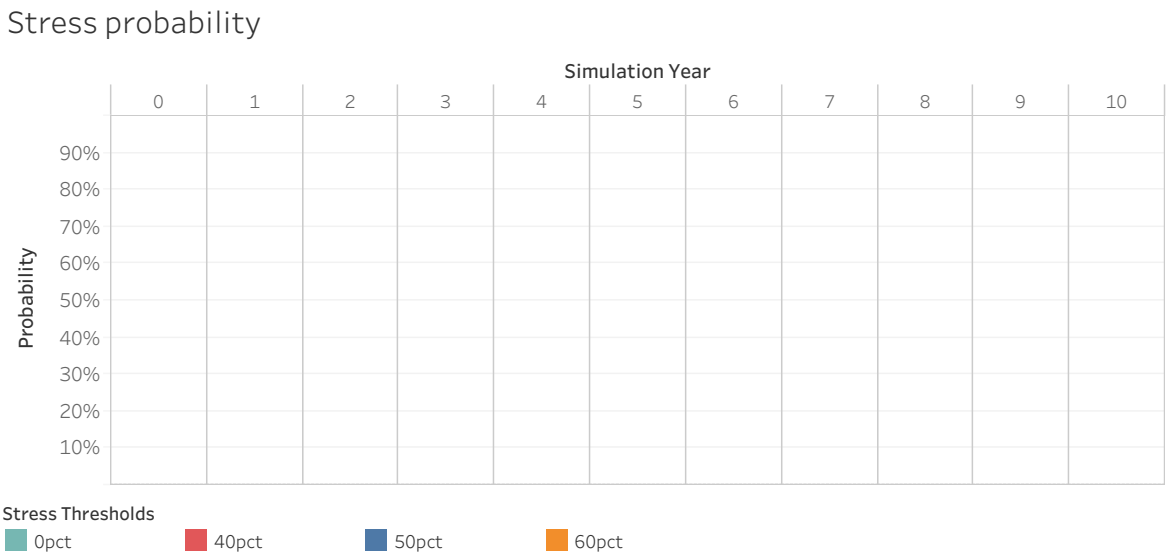
Stress probability



CORPORACIÓN ANDINA DE FOMENTO

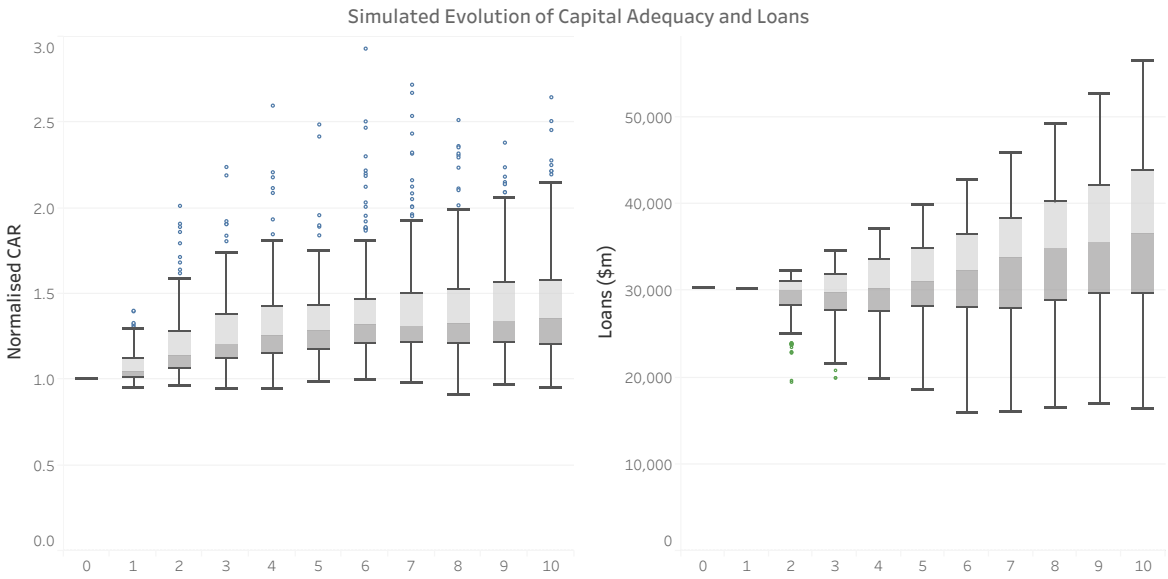
Scenario: PS



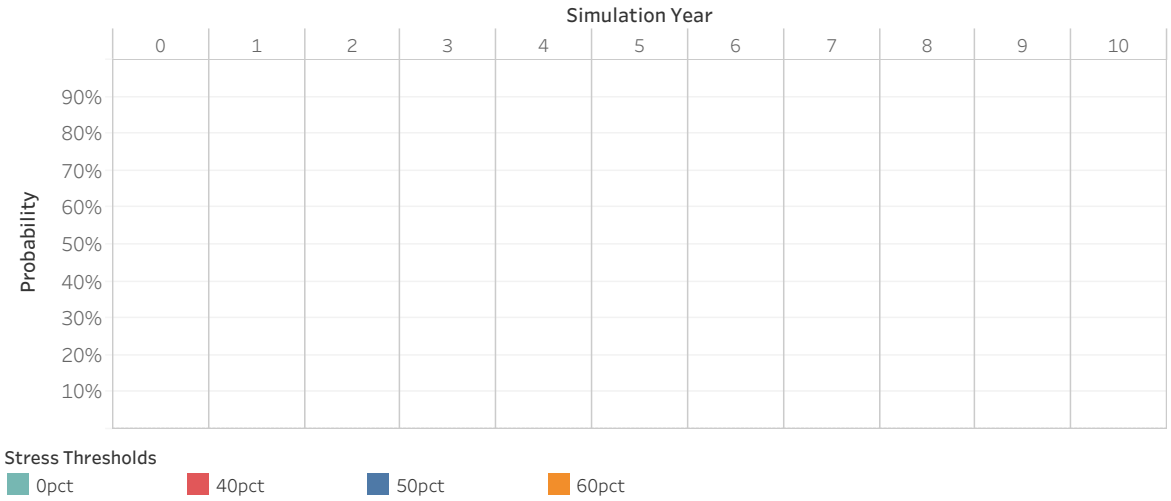


CORPORACIÓN ANDINA DE FOMENTO

Scenario: PW

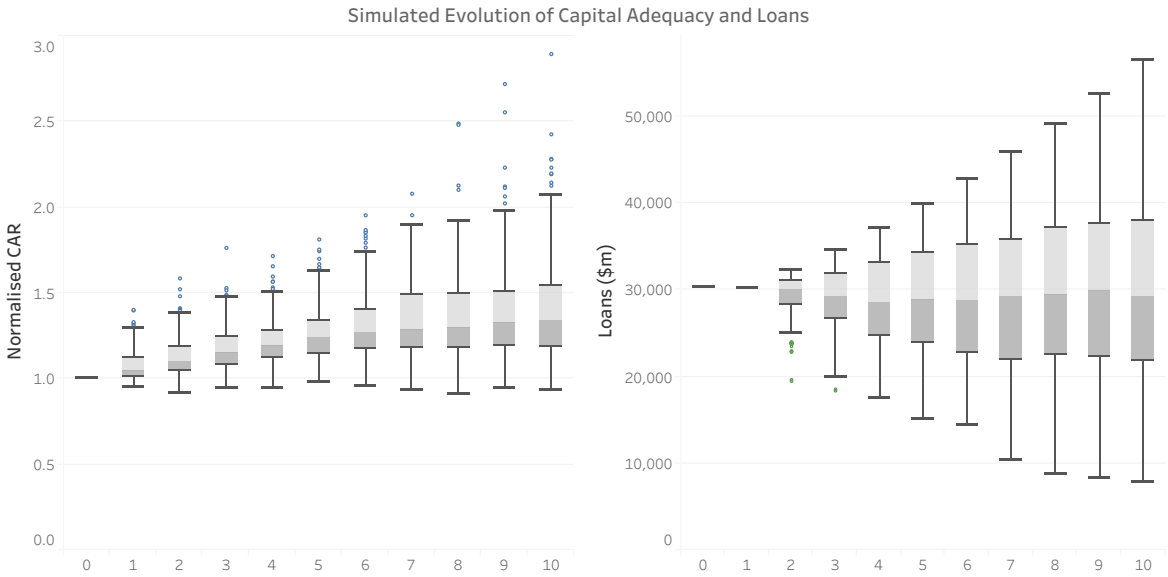


Stress probability

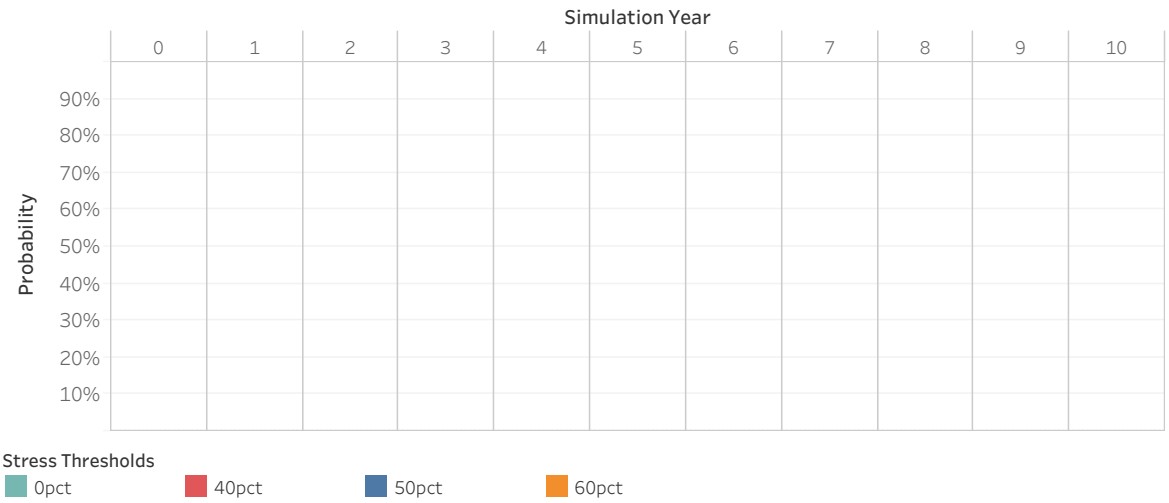


CORPORACIÓN ANDINA DE FOMENTO

Scenario: NP

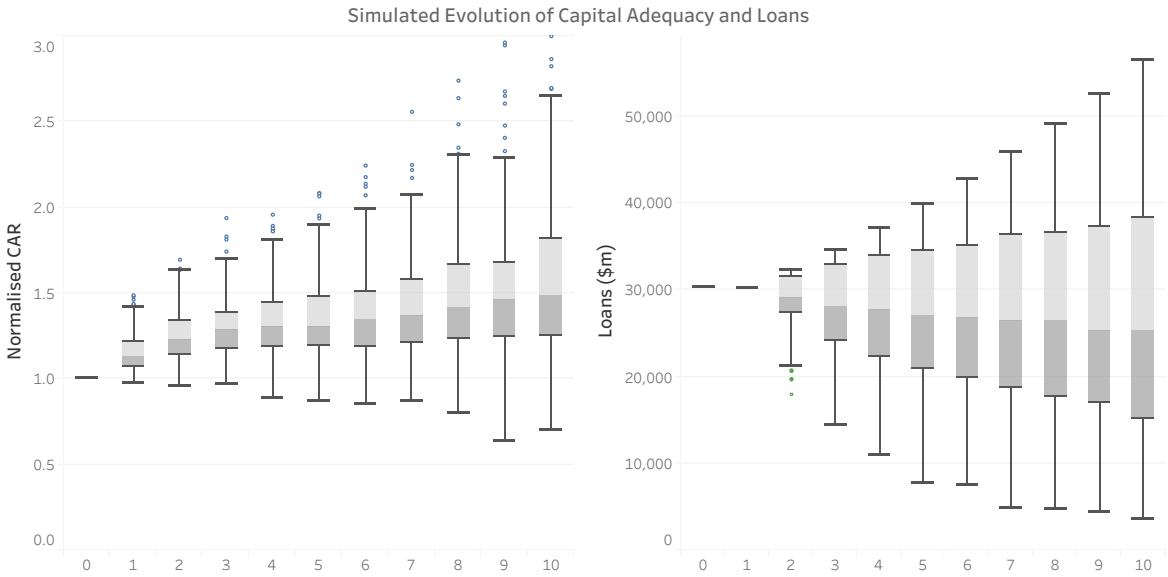


Stress probability

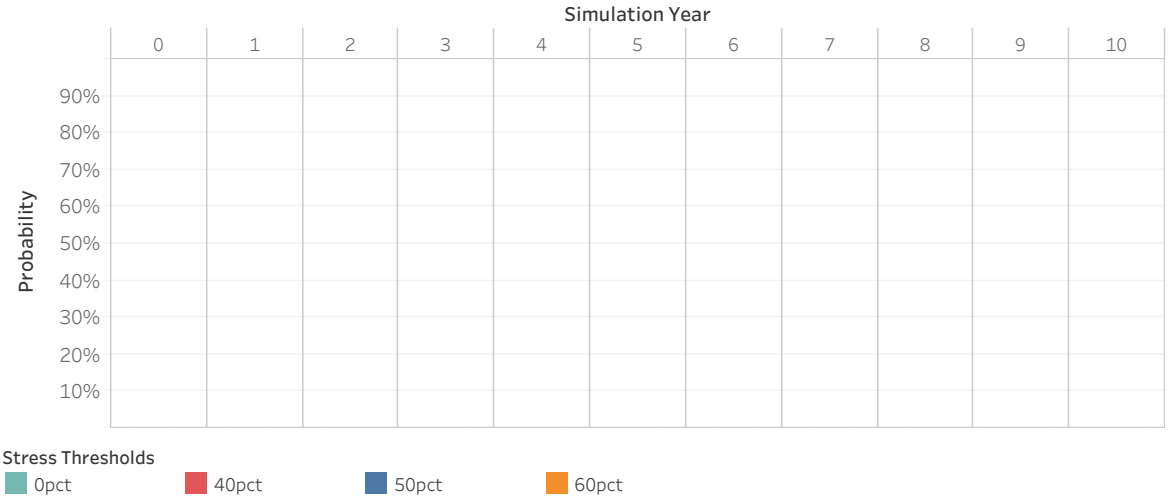


CORPORACIÓN ANDINA DE FOMENTO

Scenario: VNP

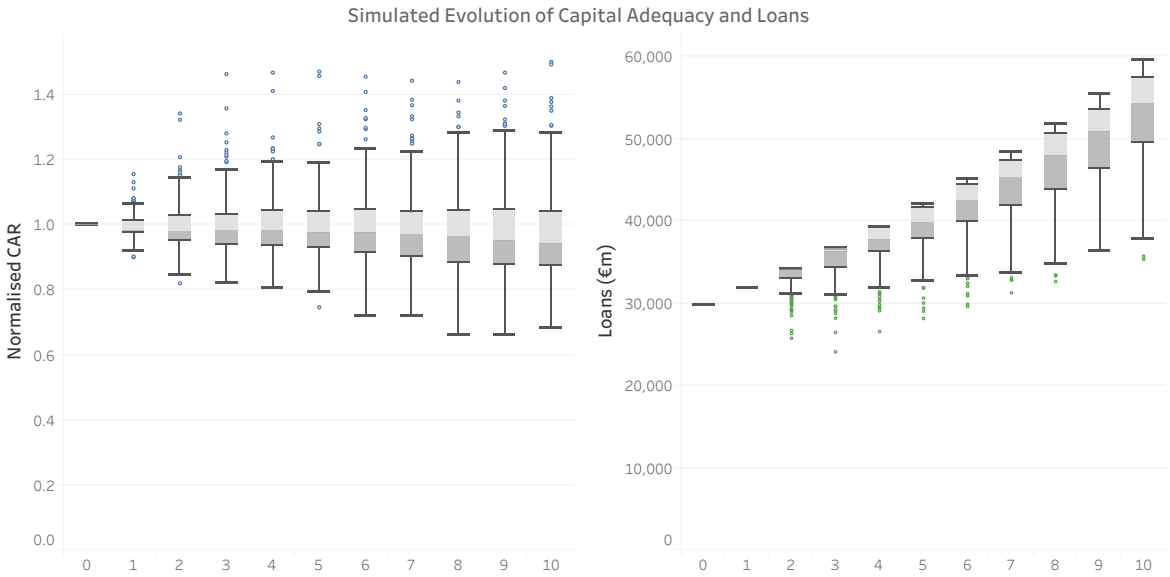


Stress probability

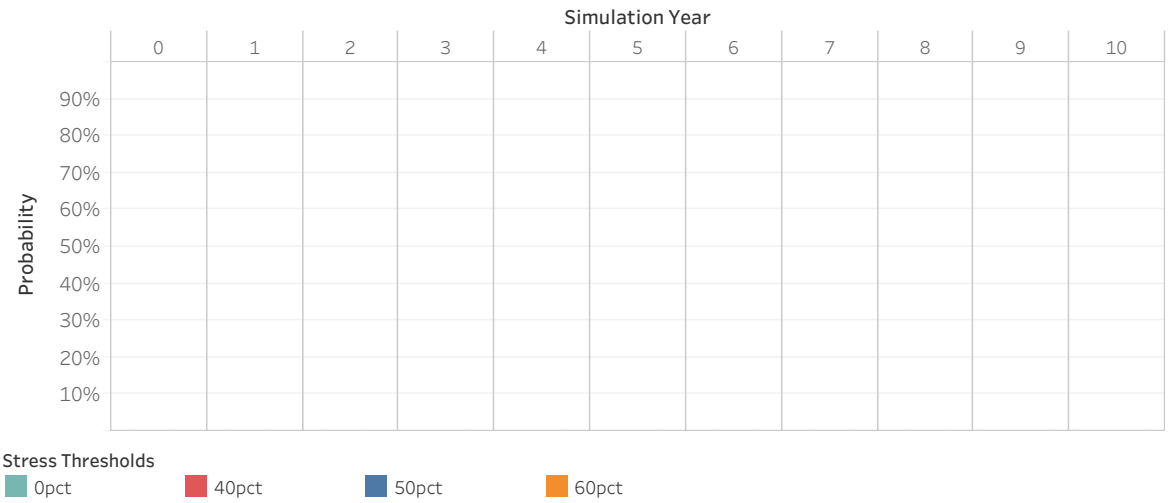


EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT

Scenario: GR1

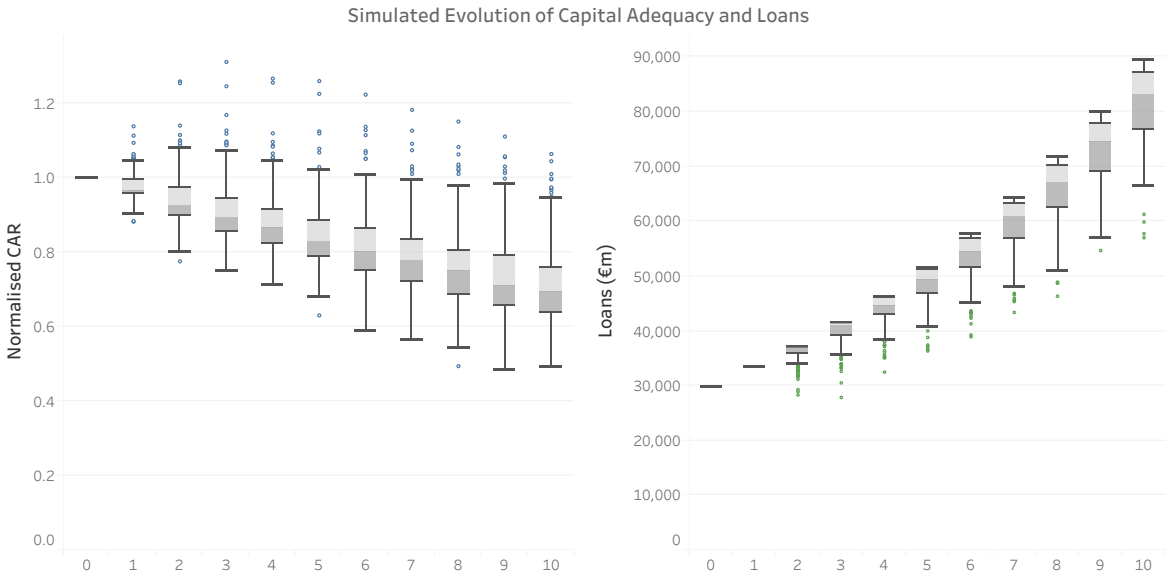


Stress probability

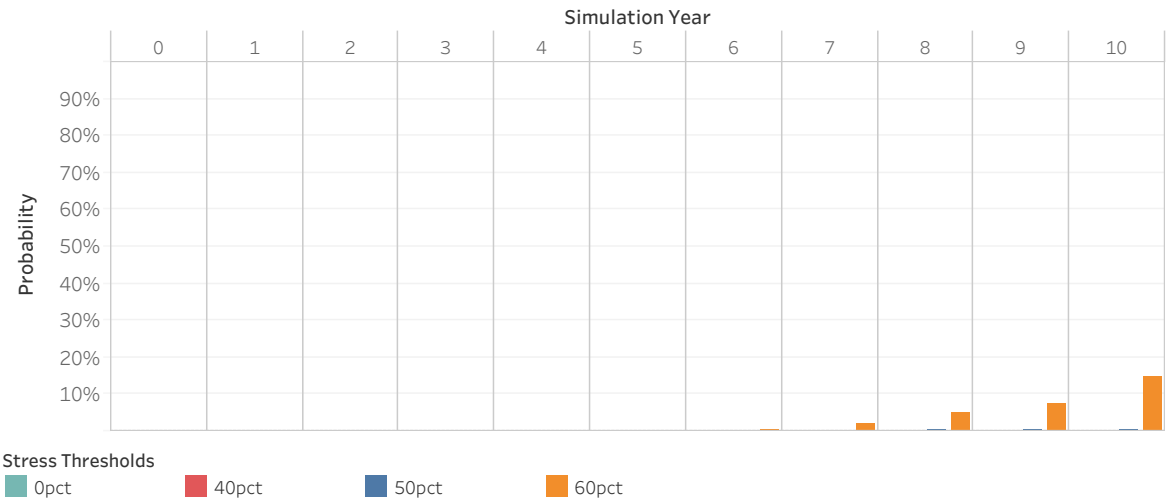


EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT

Scenario: GR2

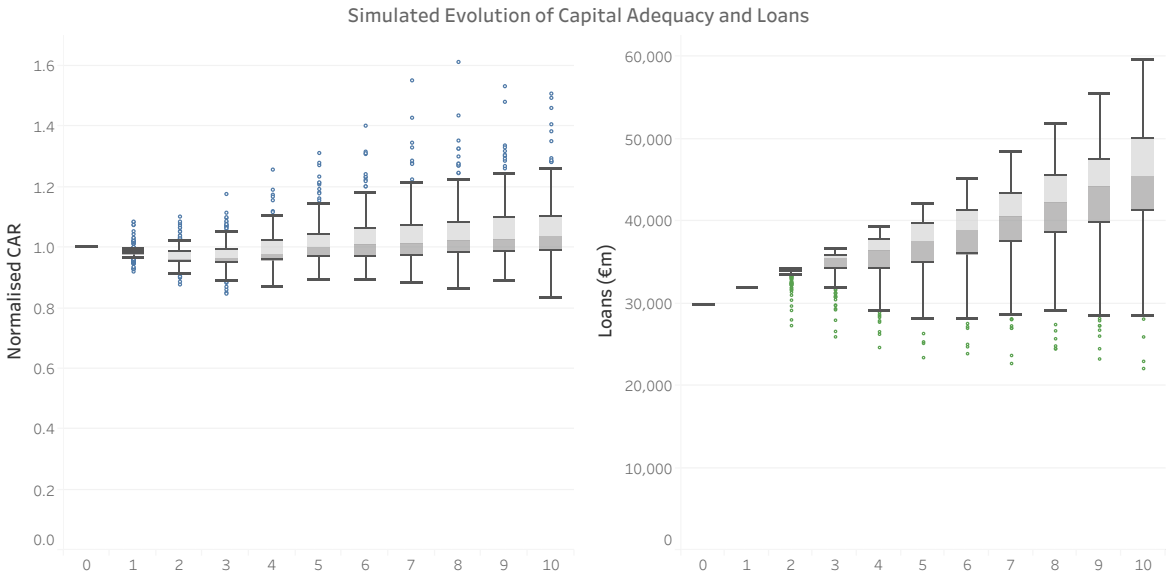


Stress probability

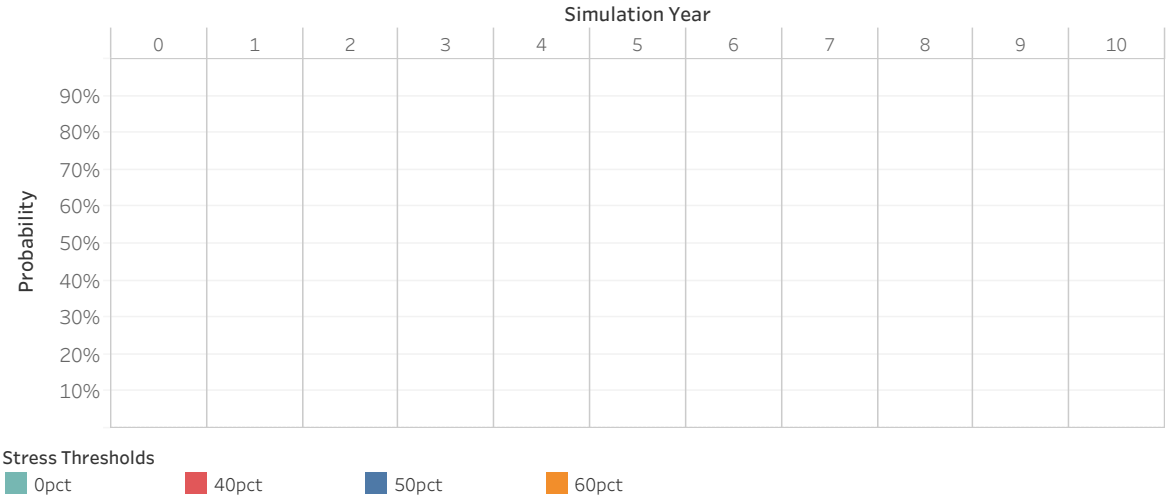


EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT

Scenario: PS

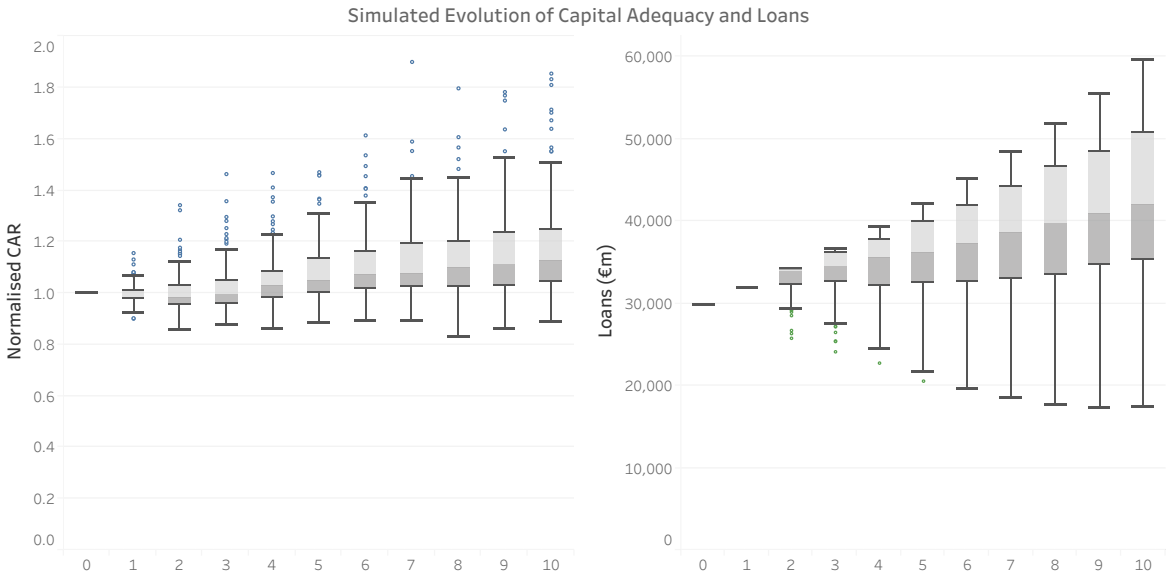


Stress probability

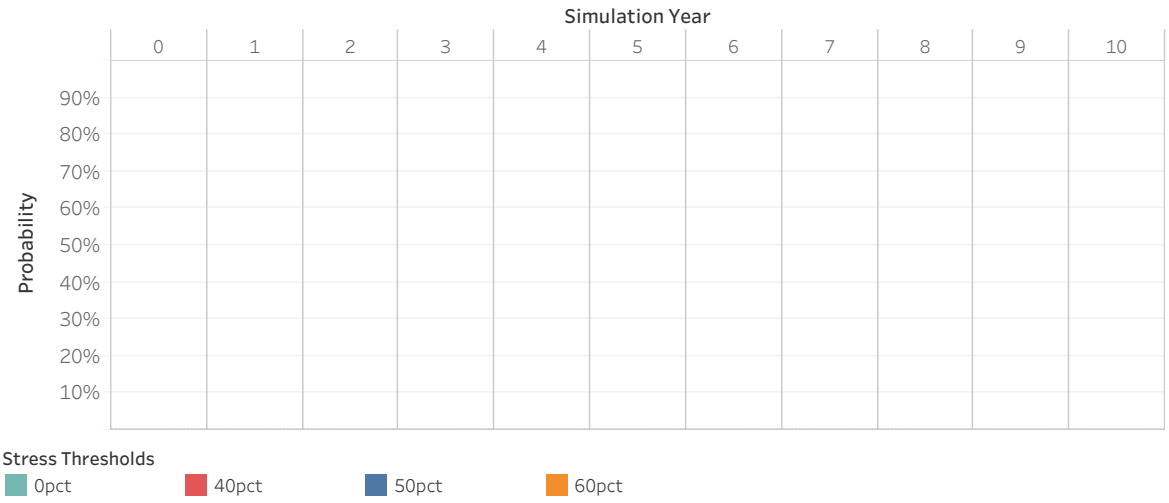


EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT

Scenario: PW

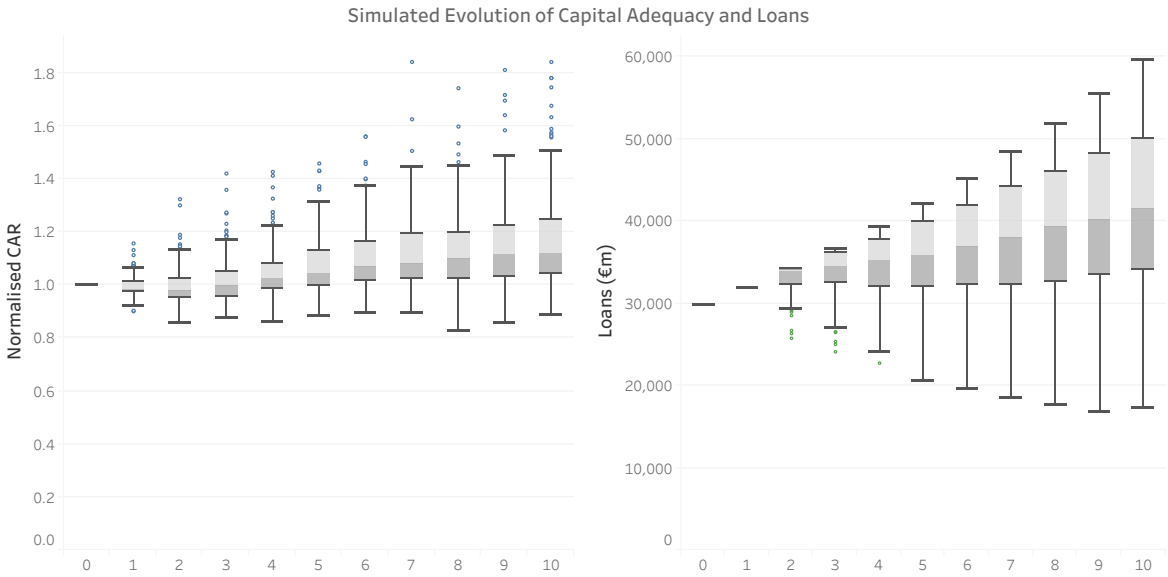


Stress probability

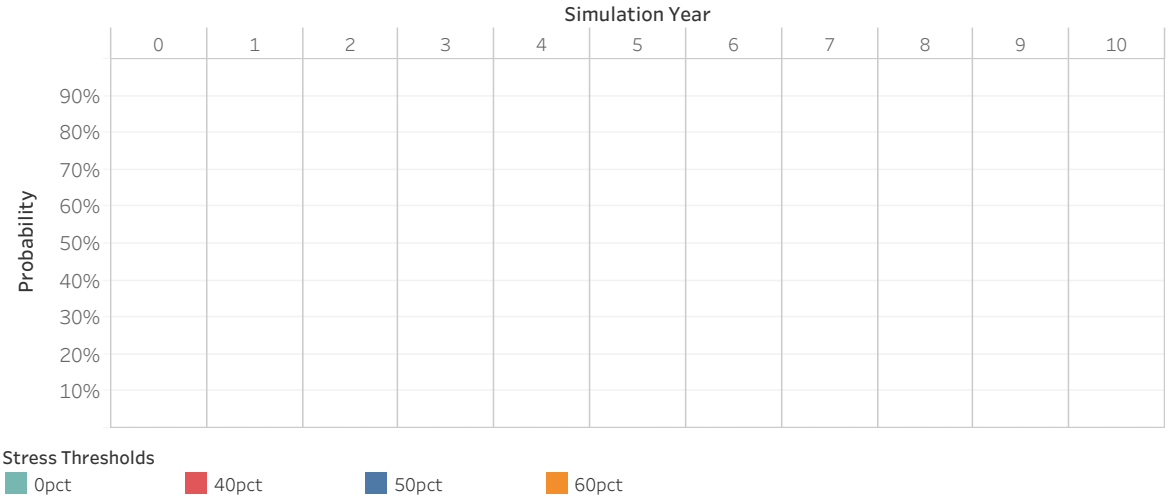


EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT

Scenario: NP

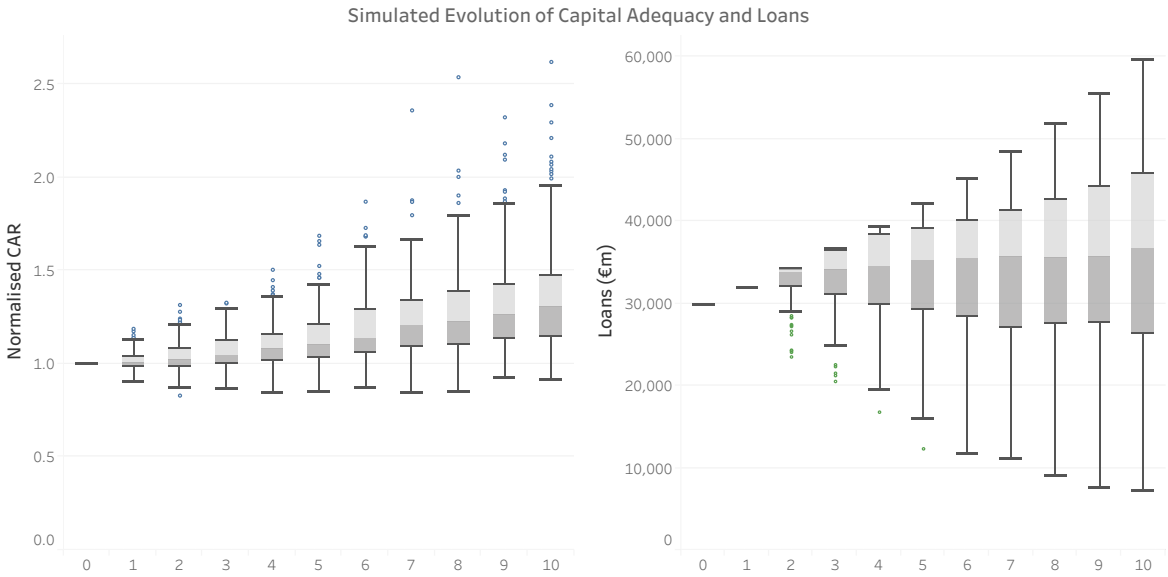


Stress probability

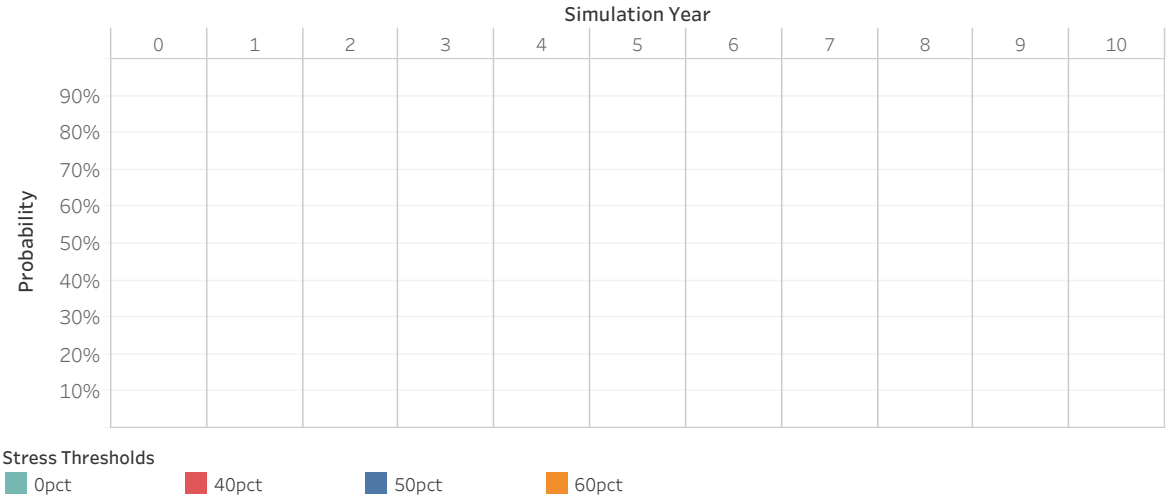


EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT

Scenario: VNP

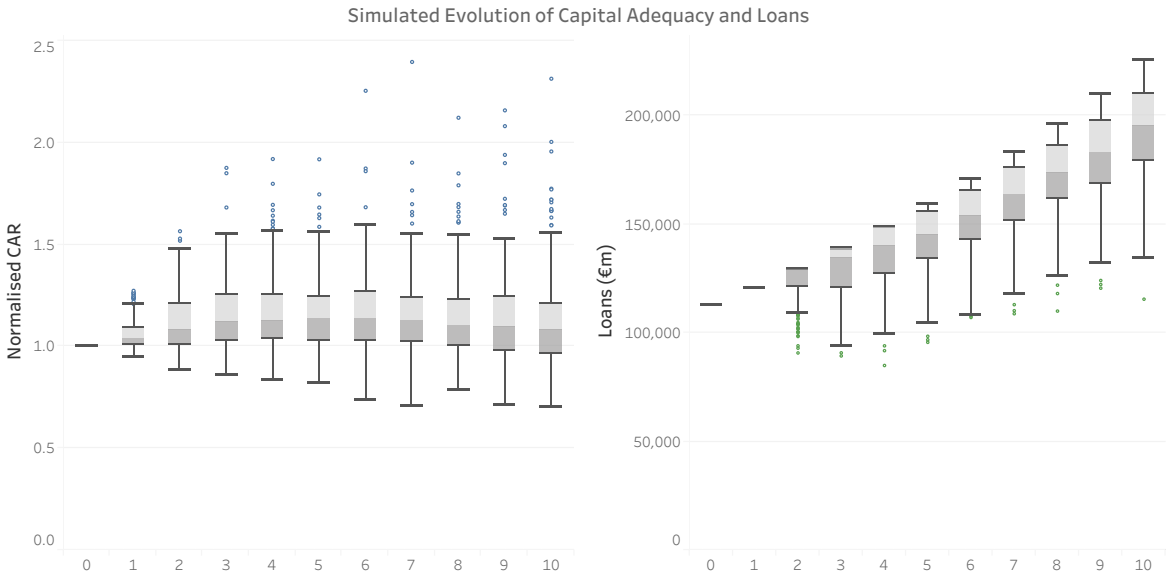


Stress probability

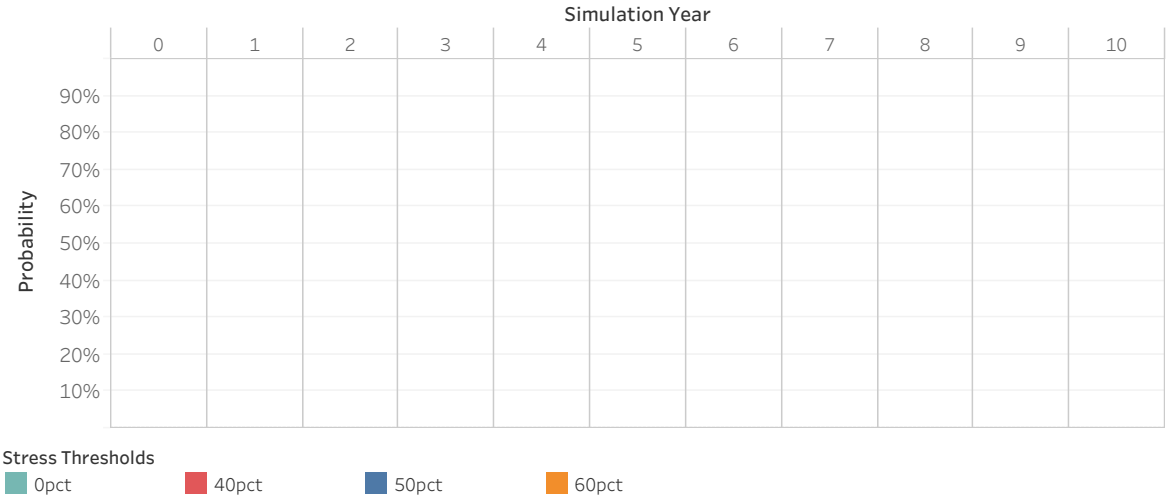


INTER-AMERICAN DEVELOPMENT BANK

Scenario: GR1

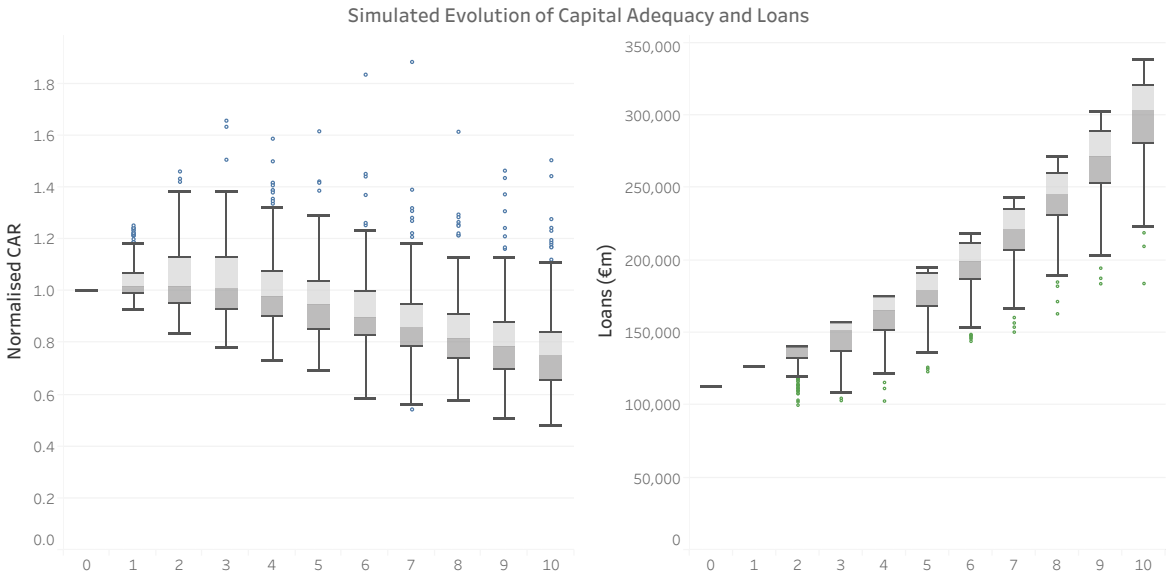


Stress probability

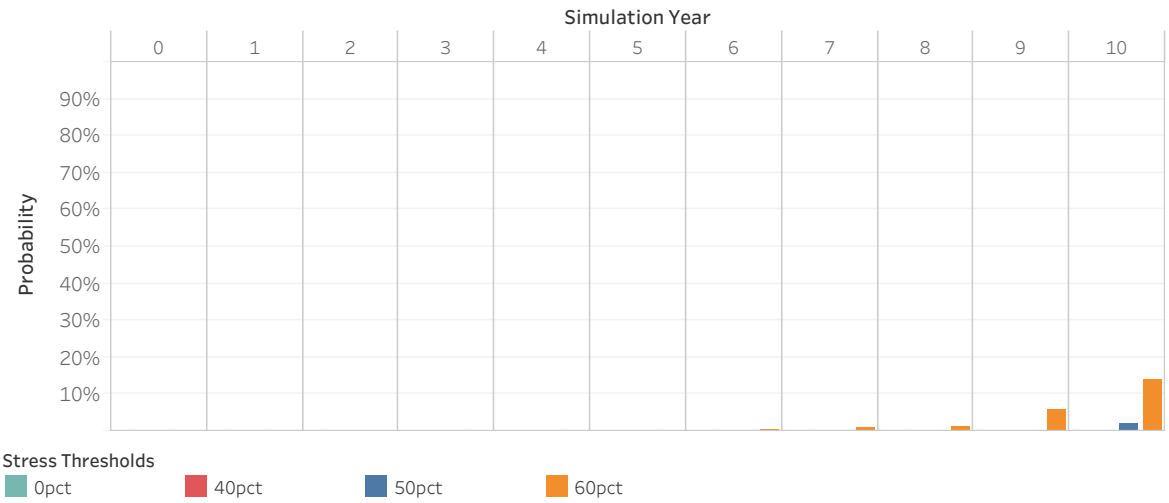


INTER-AMERICAN DEVELOPMENT BANK

Scenario: GR2

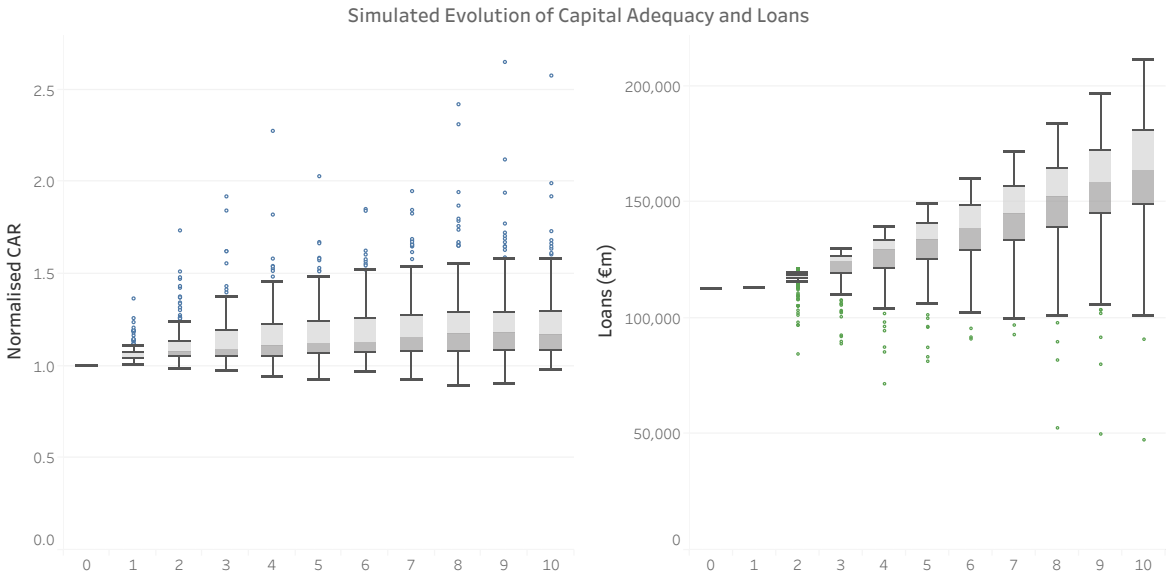


Stress probability

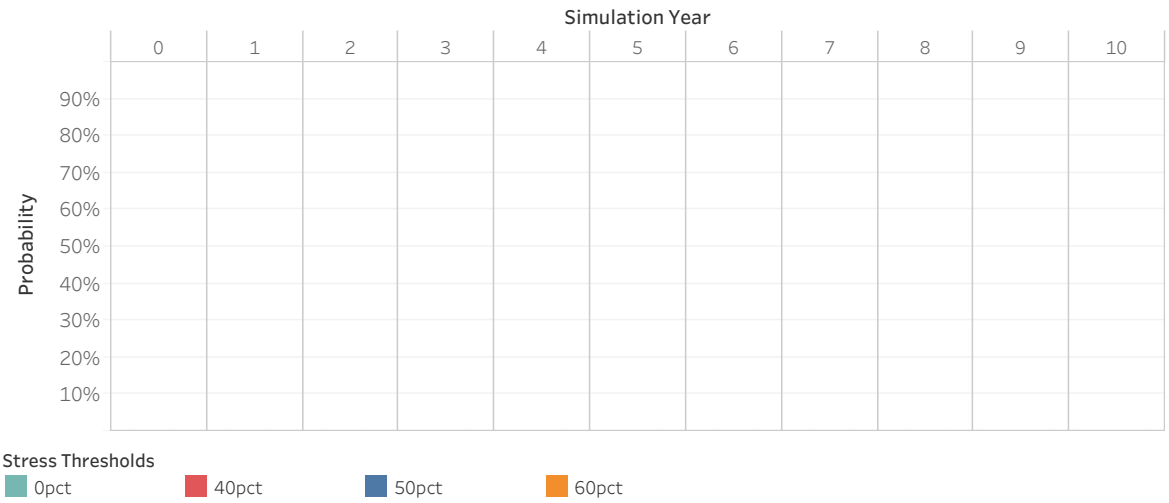


INTER-AMERICAN DEVELOPMENT BANK

Scenario: PS

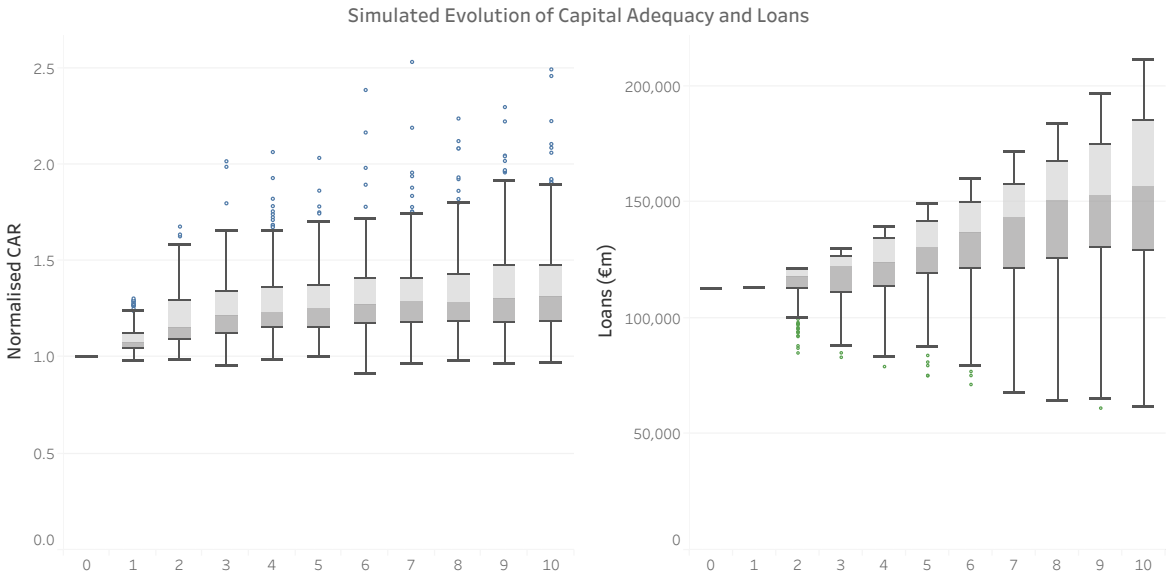


Stress probability

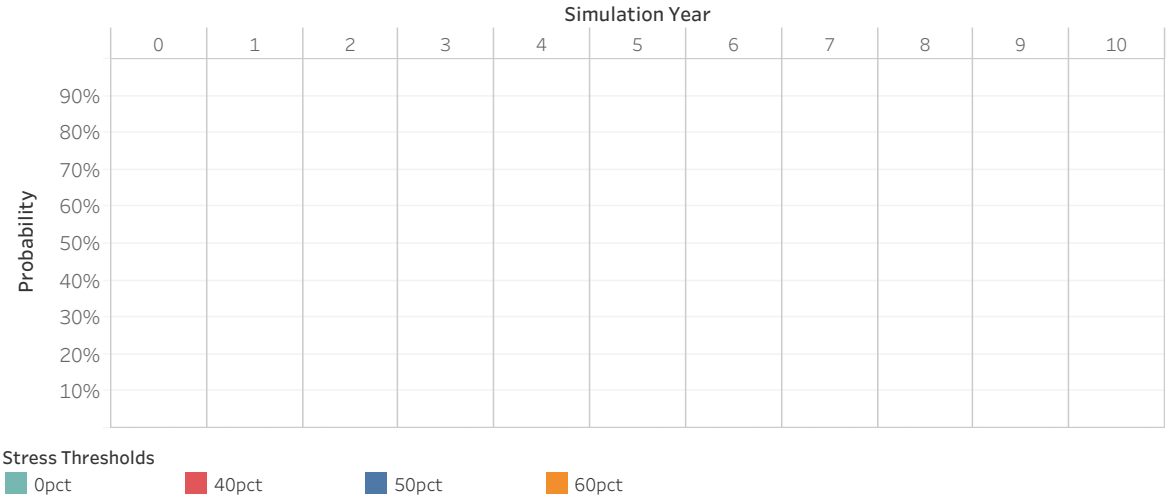


INTER-AMERICAN DEVELOPMENT BANK

Scenario: PW

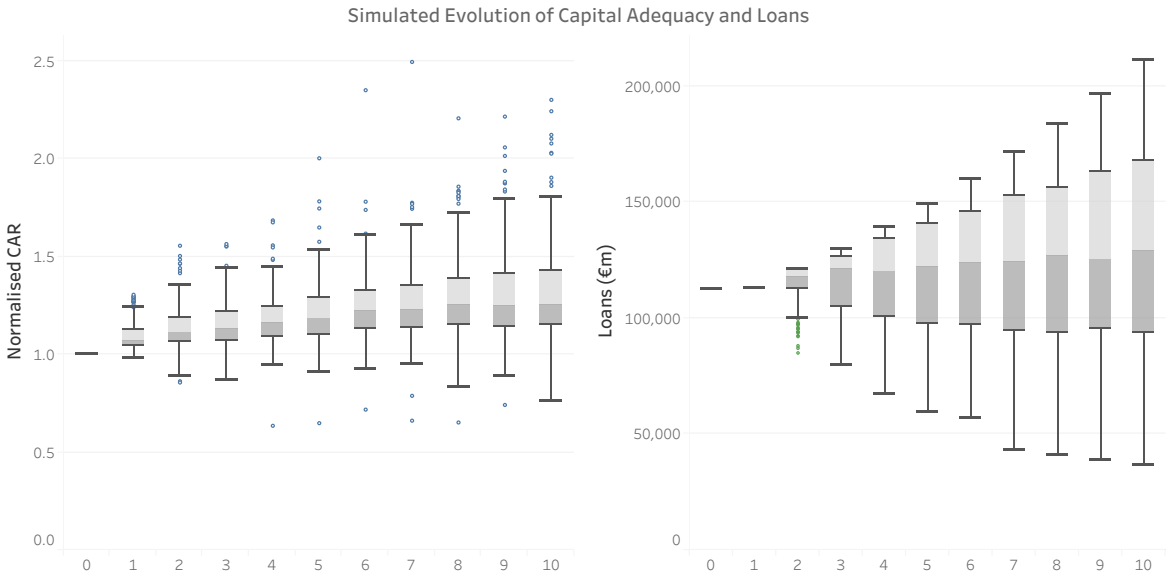


Stress probability

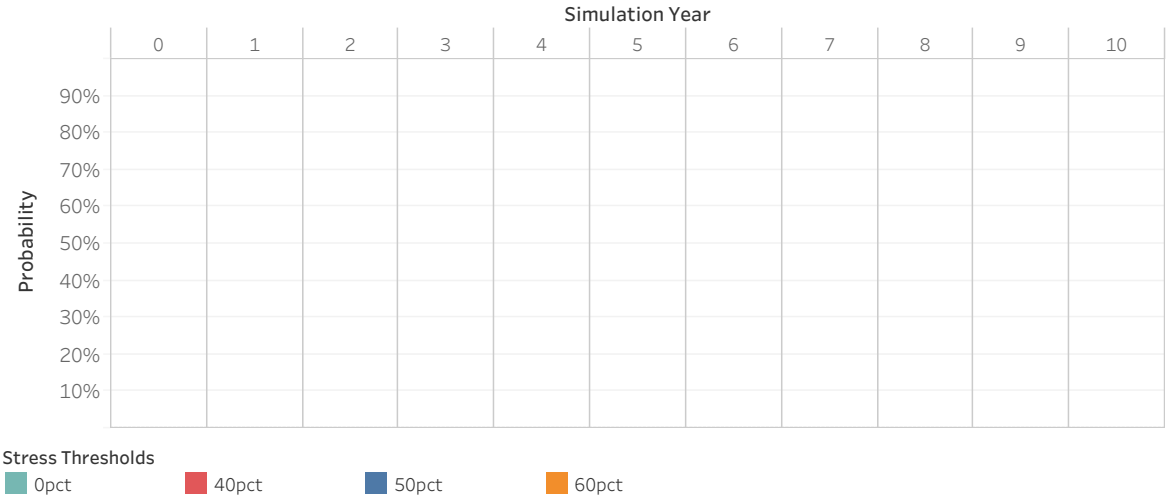


INTER-AMERICAN DEVELOPMENT BANK

Scenario: NP

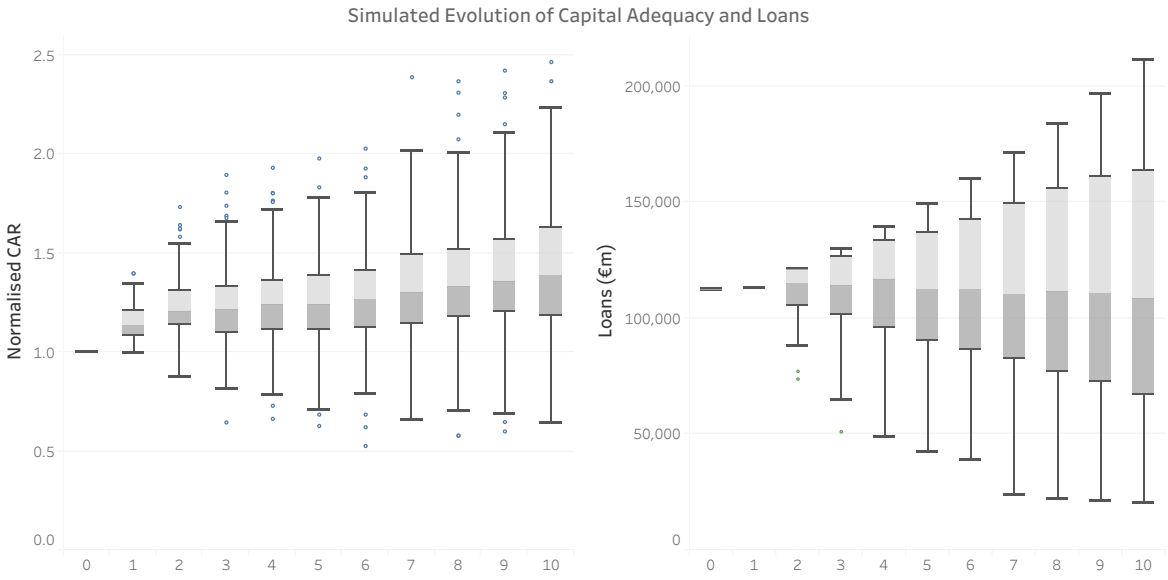


Stress probability

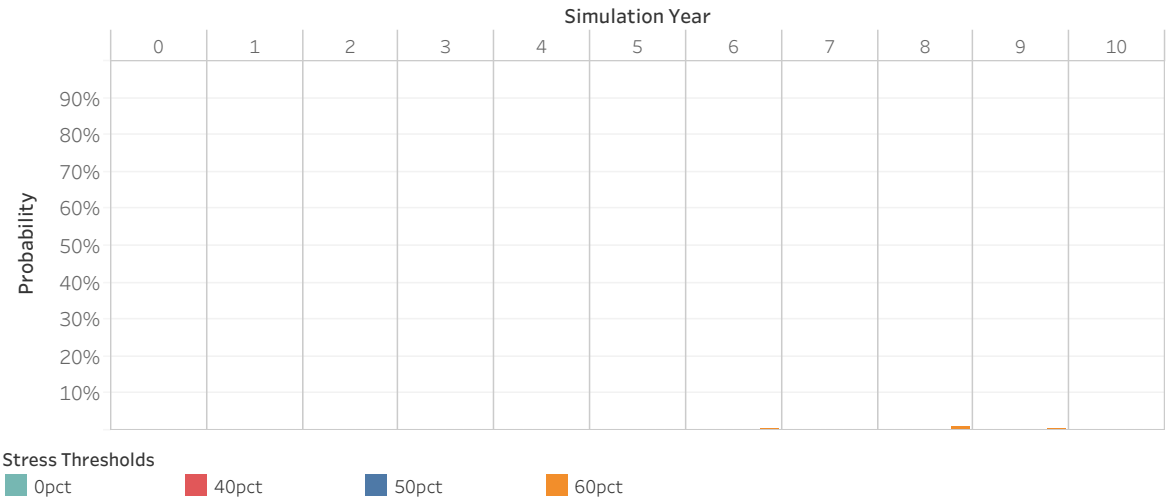


INTER-AMERICAN DEVELOPMENT BANK

Scenario: VNP

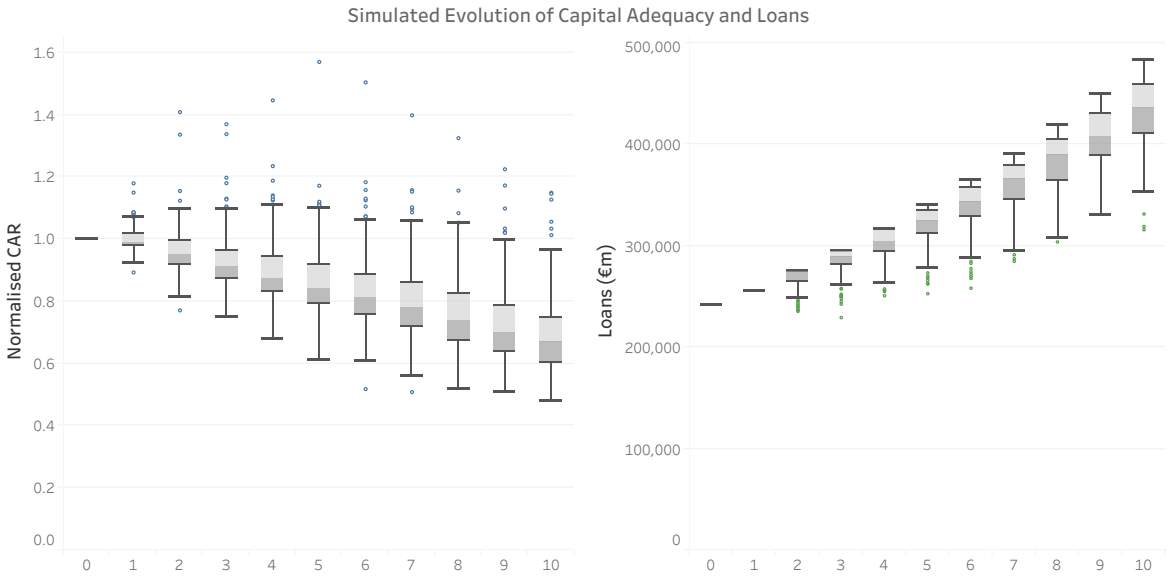


Stress probability

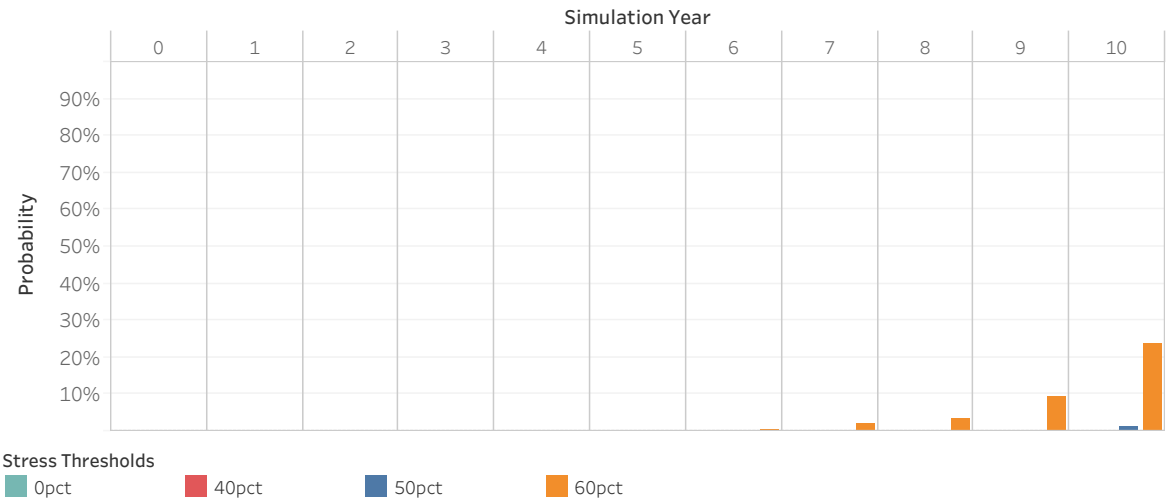


INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

Scenario: GR1

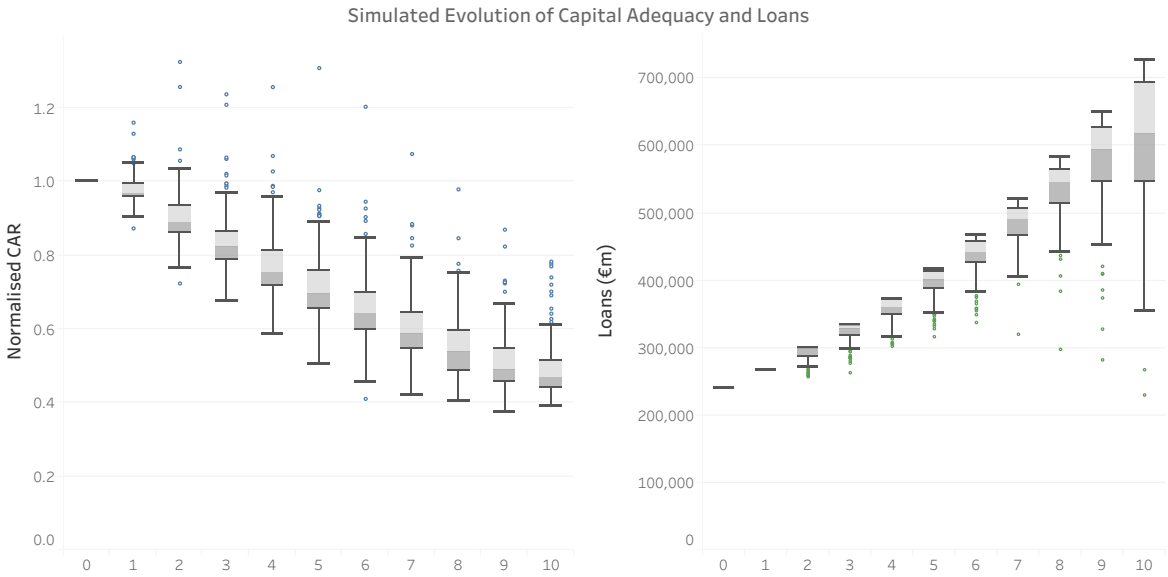


Stress probability

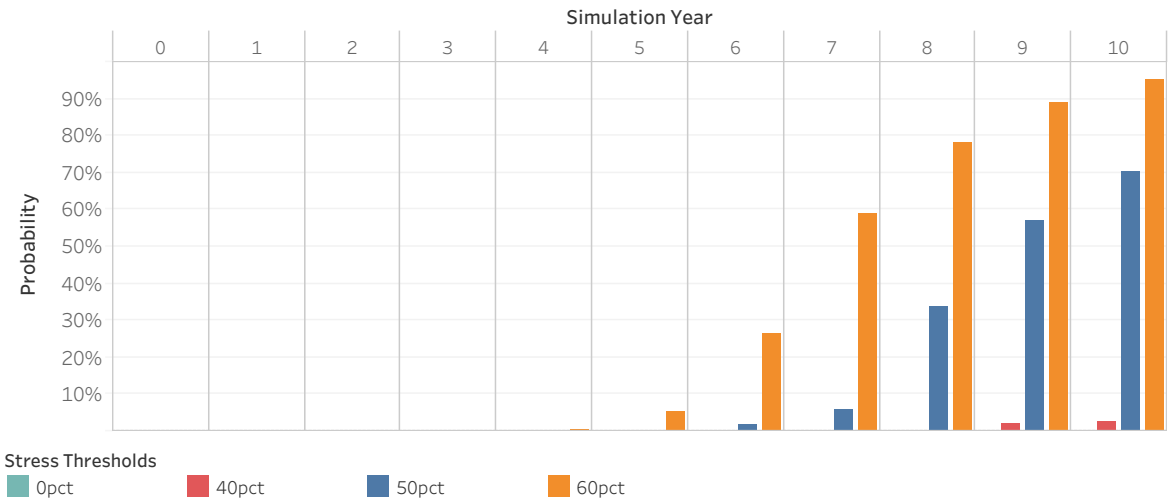


INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

Scenario: GR2

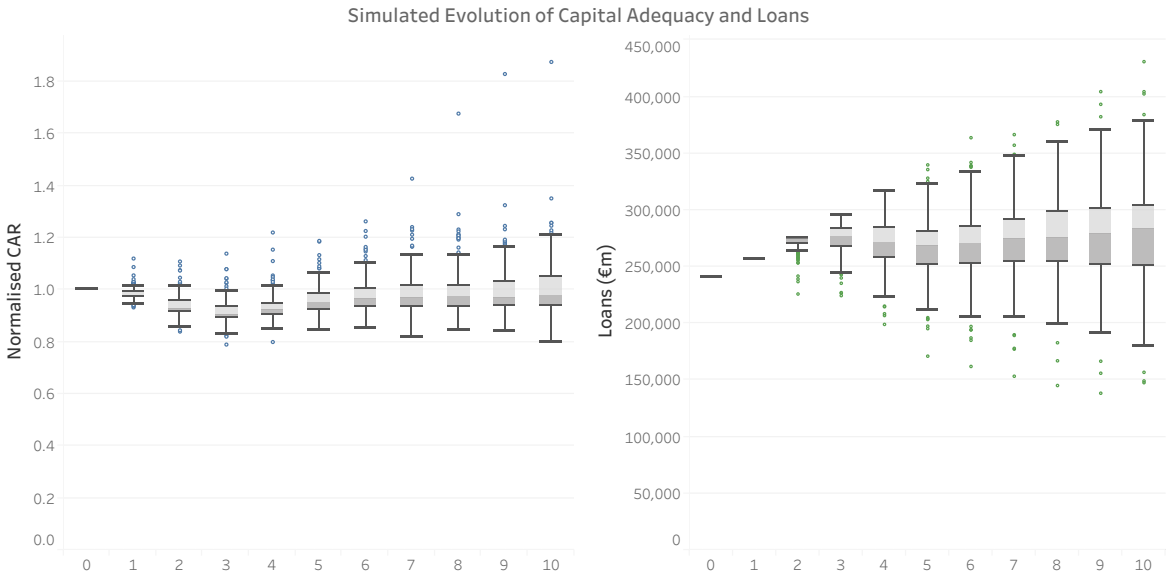


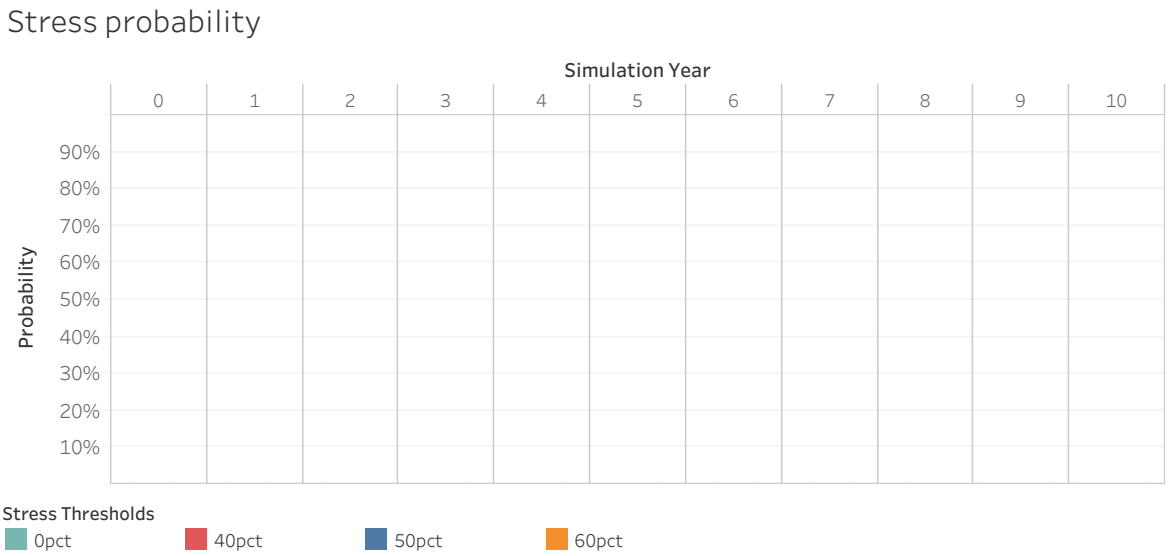
Stress probability



INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

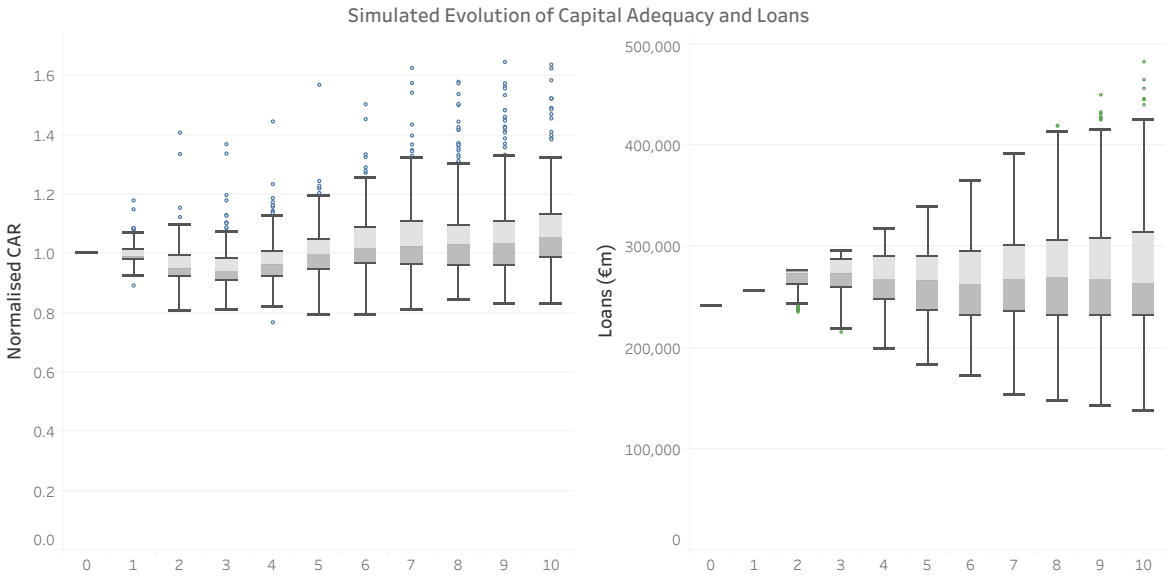
Scenario: PS



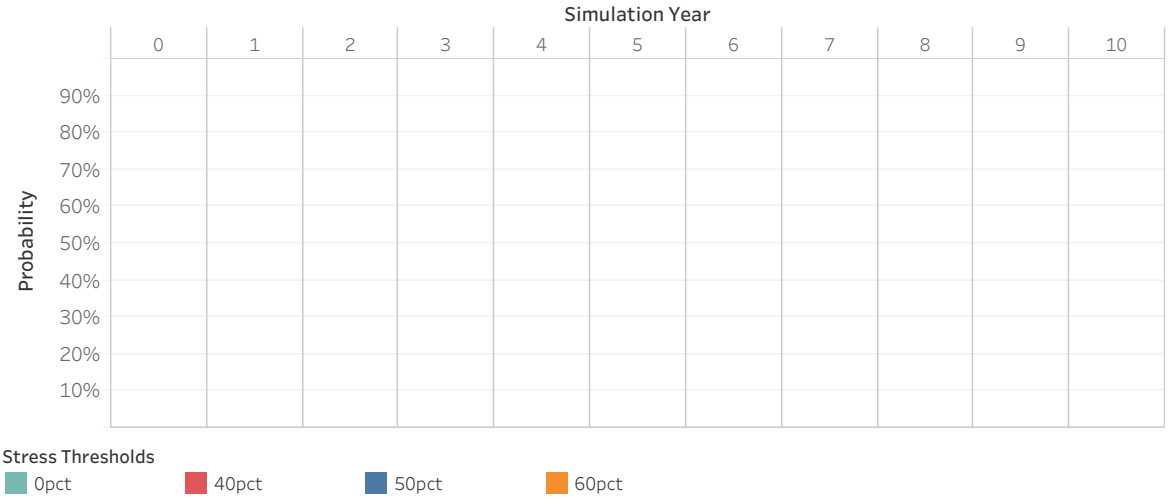


INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

Scenario: PW

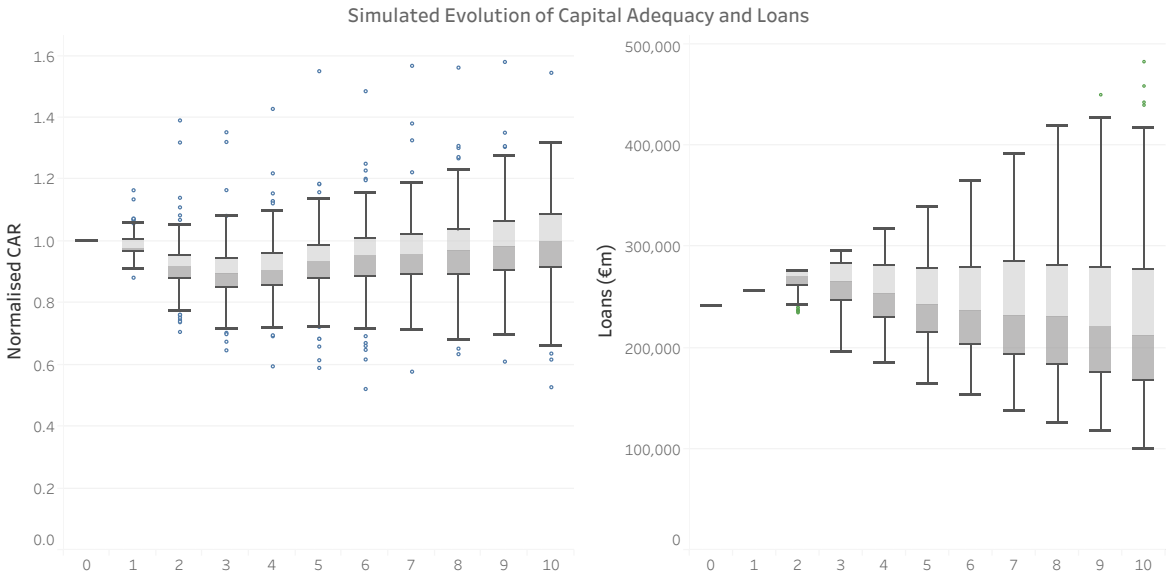


Stress probability

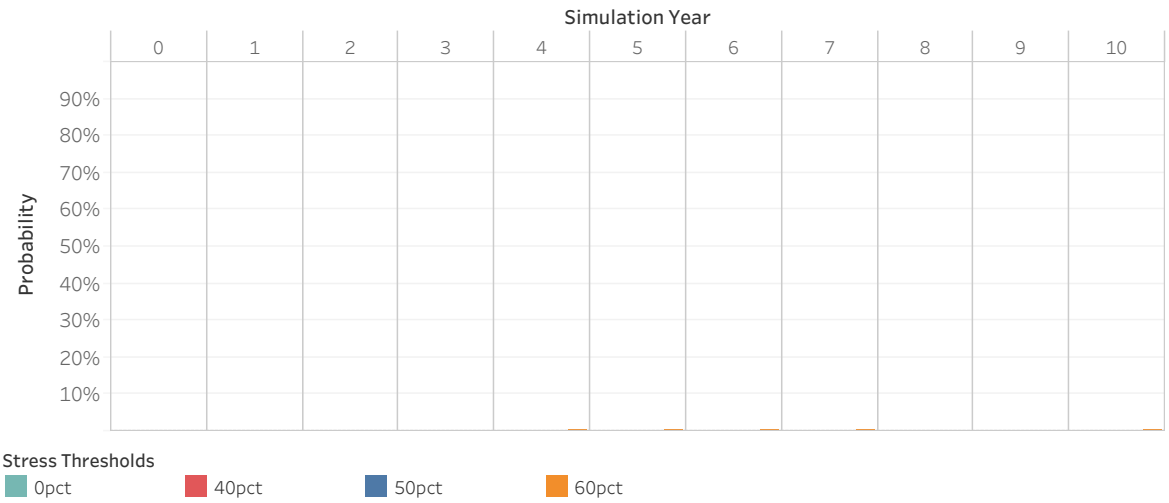


INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

Scenario: NP

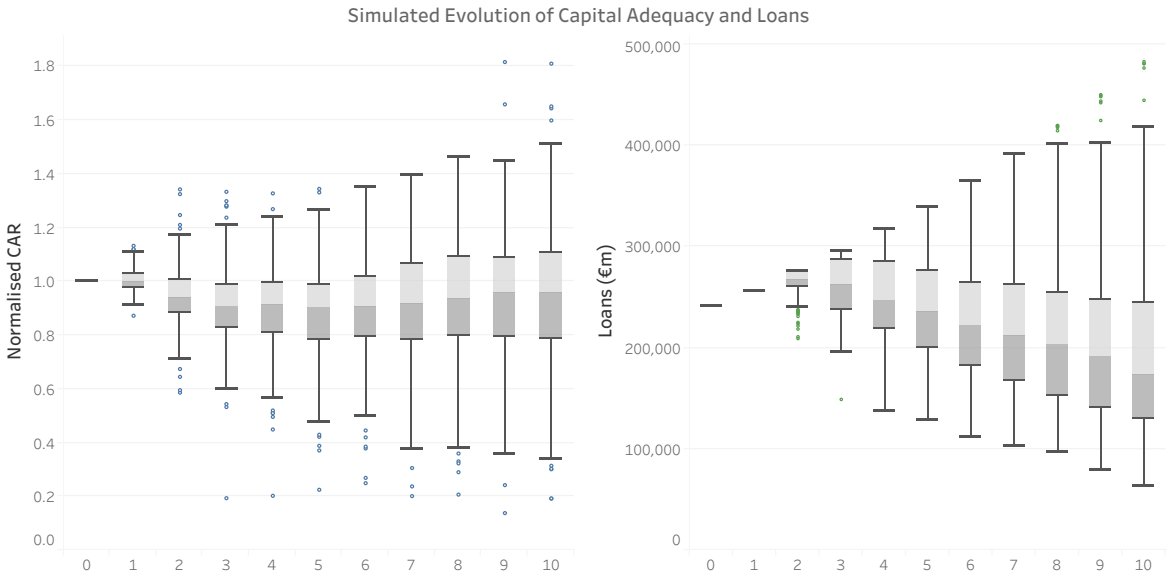


Stress probability

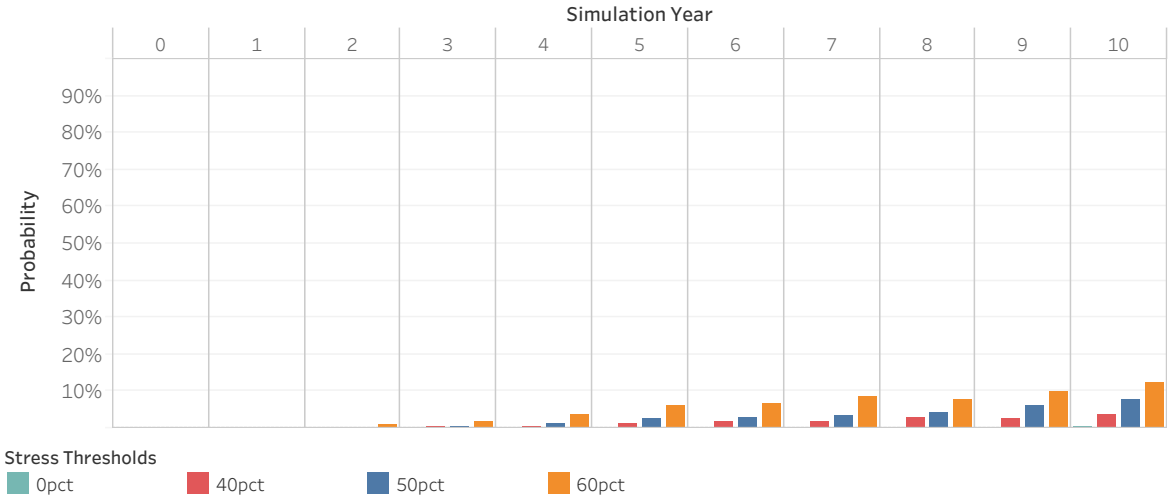


INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

Scenario: VNP

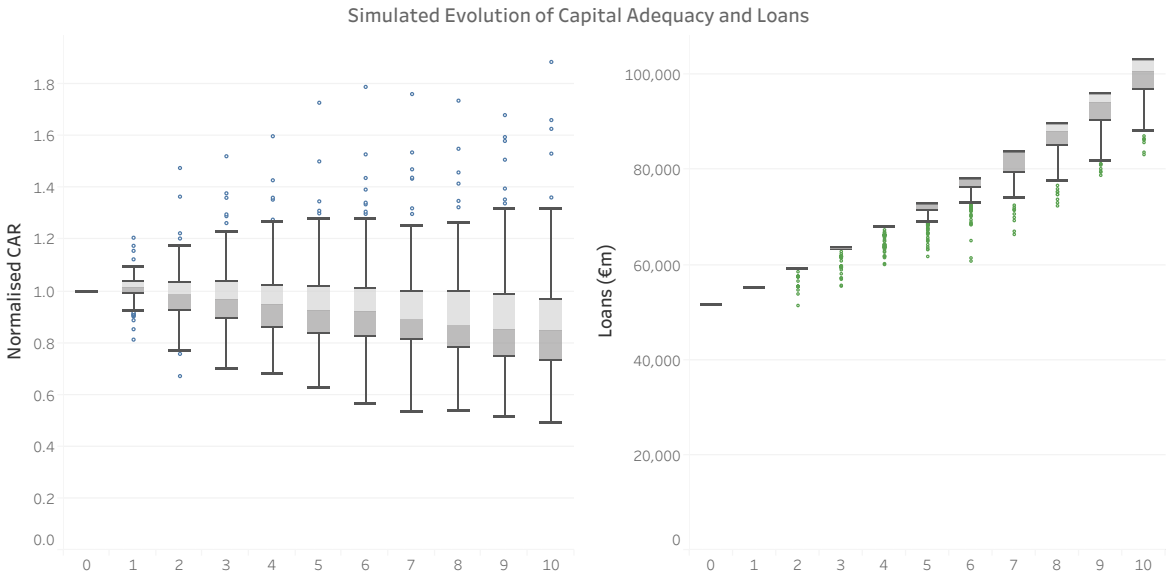


Stress probability

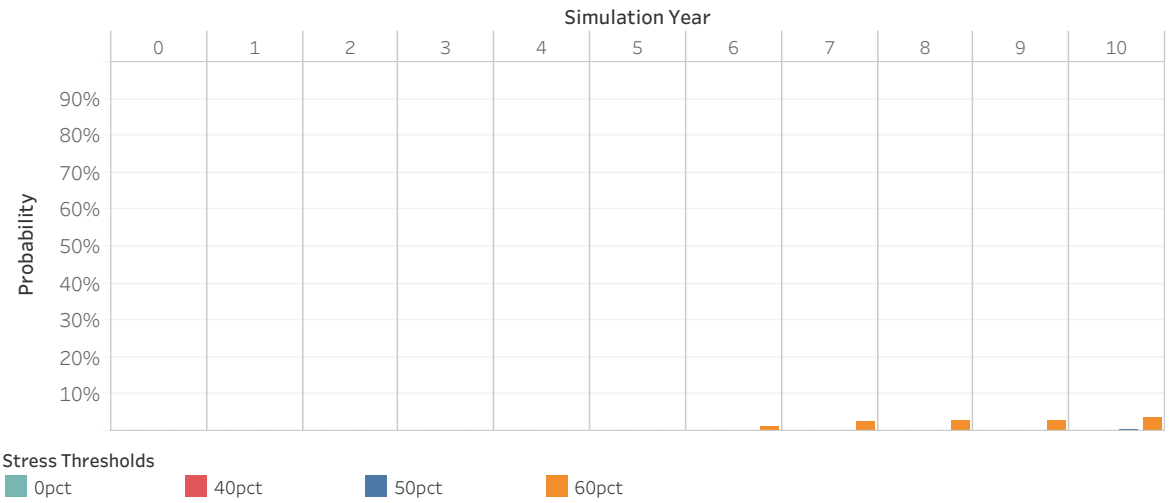


INTERNATIONAL FINANCE CORPORATION

Scenario: GR1

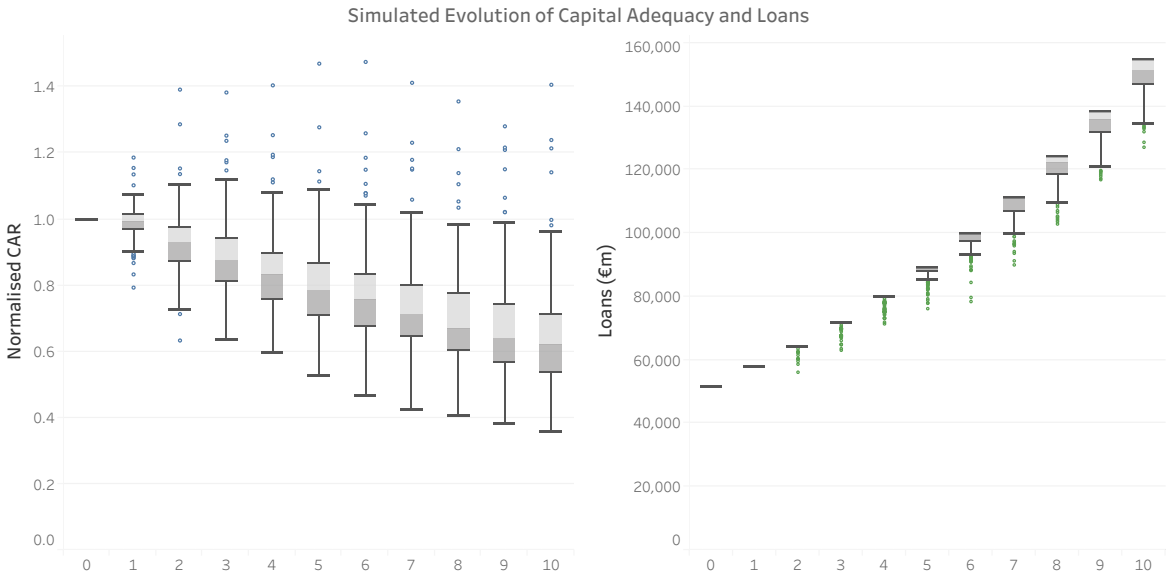


Stress probability

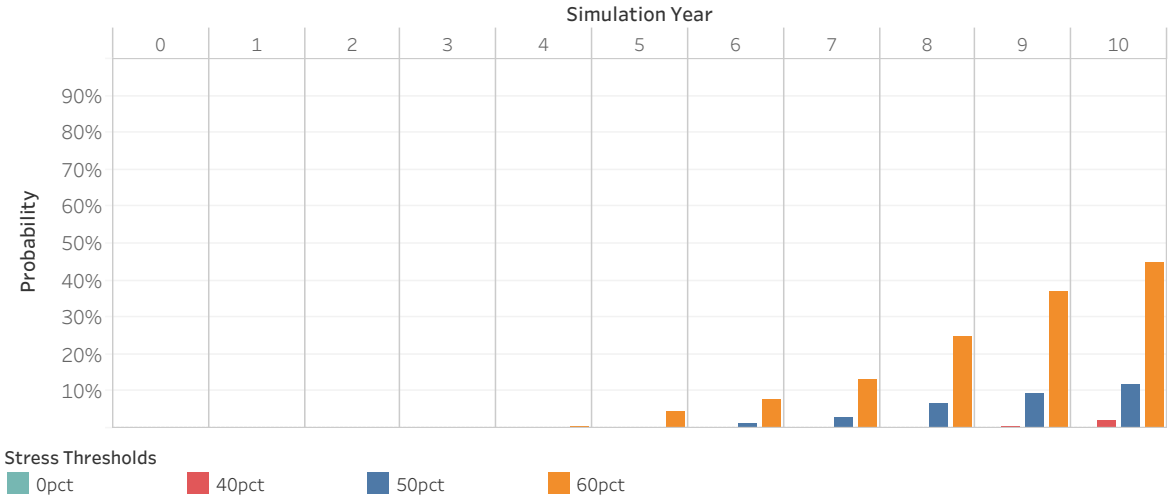


INTERNATIONAL FINANCE CORPORATION

Scenario: GR2

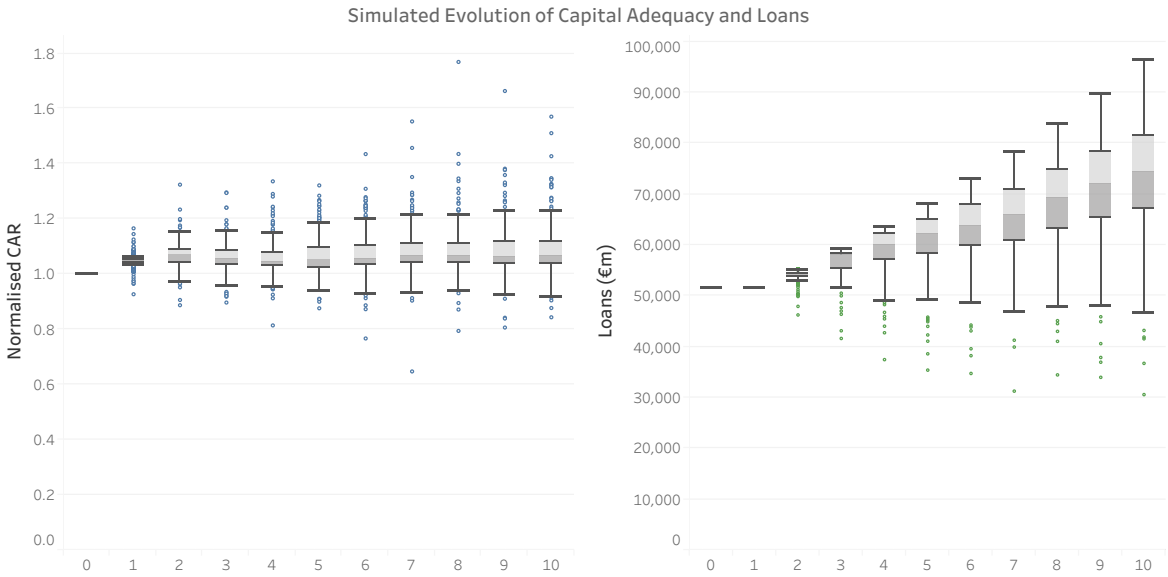


Stress probability

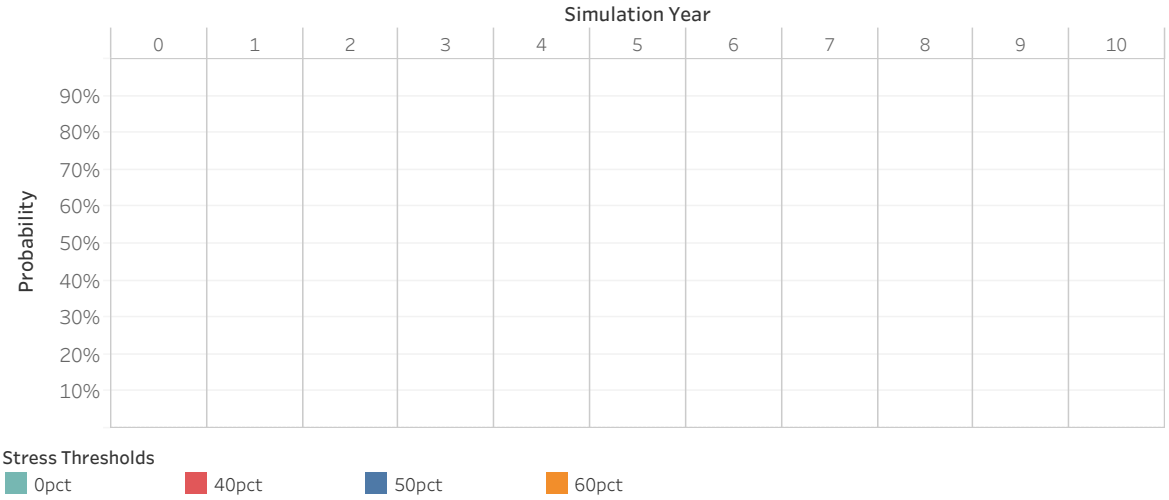


INTERNATIONAL FINANCE CORPORATION

Scenario: PS

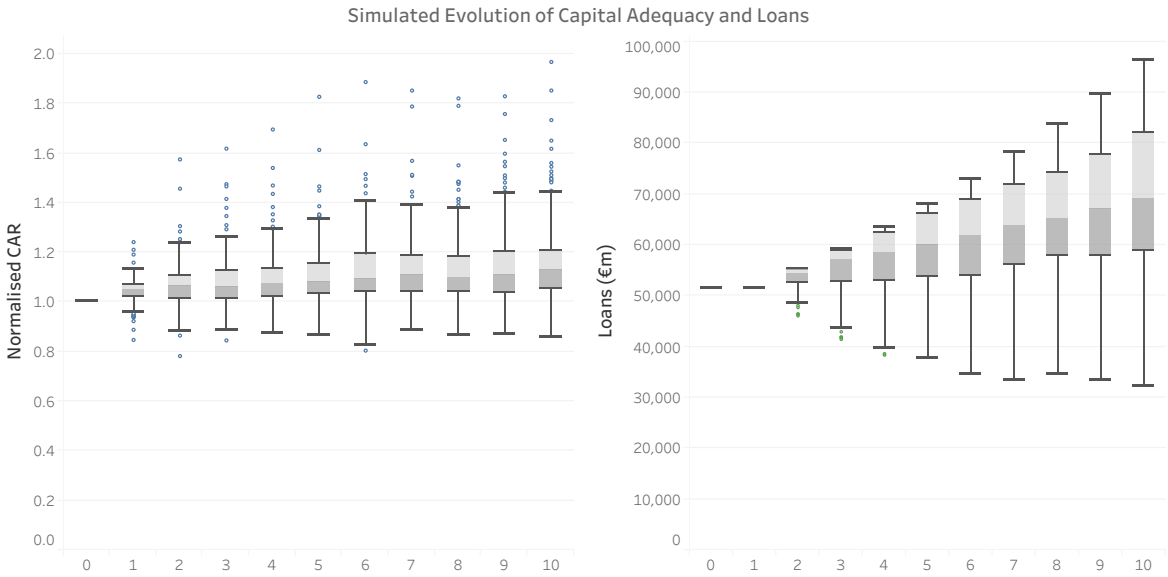


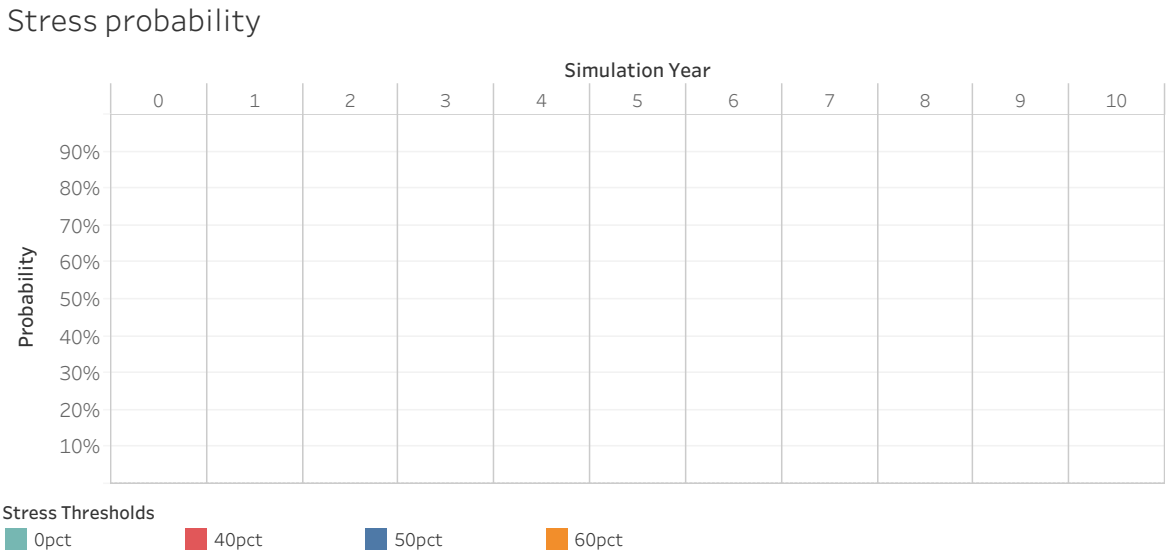
Stress probability



INTERNATIONAL FINANCE CORPORATION

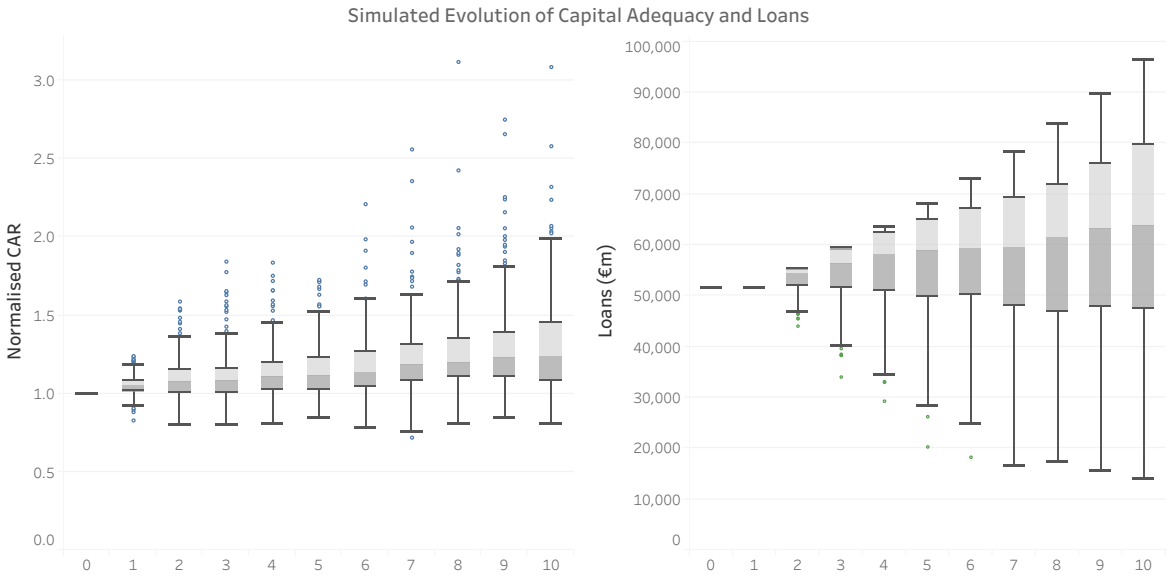
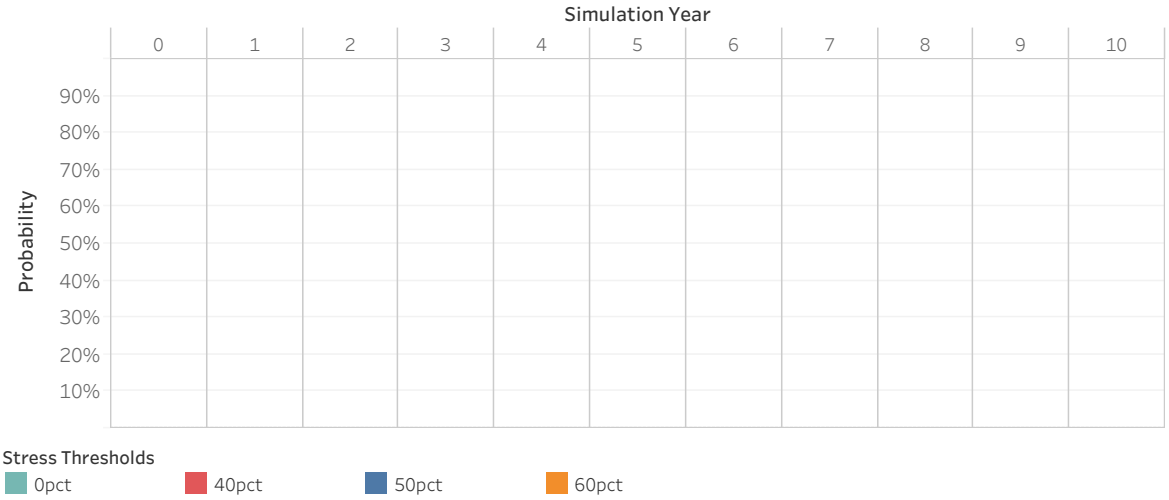
Scenario: PW/NP [the same scenario as no sovereign lending]





INTERNATIONAL FINANCE CORPORATION

Scenario: VNP



Stress probability