



Mattimore Kelly Research

# Climate Risk-Adjusted Bonds

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# Contents

<b>1</b>	<b>Purpose and Scope</b>	<b>2</b>
1.1	Support . . . . .	2
1.2	Document Revision History . . . . .	2
<b>2</b>	<b>Introduction</b>	<b>2</b>
<b>3</b>	<b>Background</b>	<b>2</b>
<b>4</b>	<b>Credit Paramaterisation under Nelson-Siegel-Svensson (NSS)</b>	<b>2</b>
<b>5</b>	<b>Credit Spread Impact of Climate with Horizon beyond Bond Maturity</b>	<b>2</b>
	<b>Appendices</b>	<b>3</b>

# 1 Purpose and Scope

This document provides an overview of isolating and measuring the climate-related risk embedded in the pricing of corporate and municipal bonds that have direct credit engagement (green bonds) or operate in industries that have material carbon footprint (utilities, oil/gas majors, large industrials, large transport)

## 1.1 Support

For any assistance, problems or suggestions regarding this document, please contact David or Johnny at the following emails:

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## 1.2 Document Revision History

Release Date	Description	Document Version	Library Version	Contributor
31-Jan-2023	Internal beta release	v1.0	v1.0 (Beta)	J. Mattimore D. Kelly

# 2 Introduction

# 3 Background

TBA

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# 4 Credit Paramaterisation under Nelson-Siegel-Svensson (NSS)

The Nelson-Siegel-Svensson formula is a simple extension to the Nelson-Siegel simplistic approach, providing an additional term to cope with a more stressed curve that is possible during a corporate credit event.

$$r(T) = \beta_0 + \frac{\beta_1(1 - e^{-T/\tau})}{T/\tau} + \beta_2 \left( \frac{1 - e^{-T/\tau}}{T/\tau} - e^{T/\tau} \right) + \beta_3 \left( \frac{1 - e^{-T/\tau_2}}{T/\tau_2} - e^{T/\tau_2} \right) \quad (1)$$

# 5 Credit Spread Impact of Climate with Horizon beyond Bond Maturity

# Appendices

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Signed,

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