Introducing default-adjusted analytics for corporate bonds

Yield Book

CRI — Credit Research Initiative, National University of Singapore

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**yieldbook.com**   An LSEG Business

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About

Yield Book

About Yield Book

Yield Book is a leading analytics platform with over 30 years of experience providing risk analytics for fixed income. Starting its life on a trading floor in 1989 and redefined by industry experts, it is used today by industry leaders across buy-and sell-side institutions and is part of the Data and Analytics division at the London Stock Exchange Group (LSEG).

Capable of handling the most complex fixed income products, Yield Book is a trusted source for in-depth risk analytics, regulatory stress-testing and complex portfolio analysis across global markets. Yield Book offers an expanded set of capabilities to institutional investors and market makers to comprehensively address their requirements.

Yield Book   **An LSEG Business**
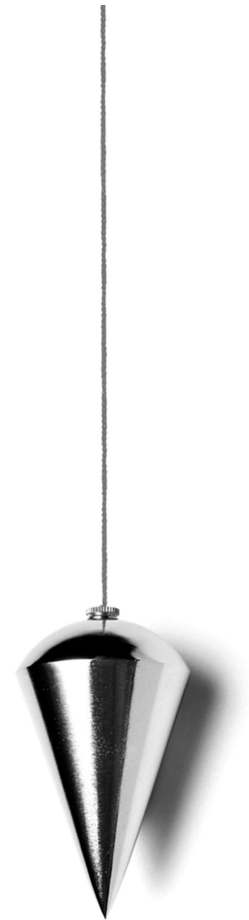
Fixed Income Analytics Solutions

to support client's complex analytical needs and help them meet their business critical deadlines

Capable of handling the most complex fixed income products, Yield Book is a **trusted and authoritative source for in-depth risk analytics**, regulatory stress-testing and complex portfolio analysis across global investments.

Analytical Core

Single Source Solution

Yield Book's analytics are driven by Pricing and Reference Data from Refinitiv (now part of LSEG) and underpin the construction of FTSE Russell Fixed Income Indexes.
By engaging with Yield Book, clients can access a "golden source" in fixed income and benefit from a fully integrated content set across prices, data, indexes and analytics.

Sophisticated Analytics

Beyond having analytical security coverage in almost every pocket of fixed income (including derivatives), Yield Book has a particular specialism in modelling complex security types such as US Non-Agencies or CMBS. Furthermore, unusually in the market, Yield Book offers clients access to an extensive security-level price and analytical history which clients can use for research, back-testing and construct investment strategies / insights.

Differentiating Insights

The Yield Book platform employs the latest techniques in cloud architecture and advances in data science to build analytics which offer clients differentiating insights. Yield Book's developments in liquidity, sustainable investment, cashflows modelling and default-adjusted analytics coupled with its flexibility, offer a clients a unique opportunity to refine analytical insights to serve their perspective.

Regulatory Alignment

For decades Yield Book has supported clients' efforts to have an independent risk assessment as part of regulatory risk submissions. This experience in supporting client regulatory submissions, including their model validation efforts makes Yield Book a trusted partner to its clients.

Unrivalled Flexibility

Yield Book offers unrivalled flexibility in it analytics. While it can offer analytics out of the box, with market aligned standard assumptions, clients are offered an extensive opportunity to refine their analytics sets and include custom data, curve assumptions and scenarios.

Underpinned by:

Research, Innovation Lab and Analytics Research and Product Publications

Accessible via:

| Yield Book Add-In | Yield Book API | Yield Book Classic & Batch | Yield Book Calculators (In Q & Eikon*) | Integrated DataScope Feed* |

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Work in Progress; Expected to be available later in 2021.

About

Credit Research Initiative

About NUS CRI

The **Credit Research Initiative (CRI)** is a non-profit undertaking at the National University of Singapore (NUS). It was launched by **Prof Jin-Chuan Duan** in 2009 and is under the **Asian Institute of Digital Finance**, a digital finance-focused research institute.

The Credit Research Initiative:

- Provides daily updated probability of default data with newly collected information
- Operates in non-proprietary and completely transparent manner
- Remains a research centre which produces a suite of publications to disseminate novel technologies in credit research
- Jointly developed with International Monetary Fund (IMF), a credit stress testing and scenario analysis toolkit called **BuDA** in 2016, an integrated Bottom-up Default Analysis system to perform stress testing at a Regional, Economy and Industry level
- Commercial collaboration with Regulatory Bodies, Financial Institutions, Fintech firms and many international organisations across globe
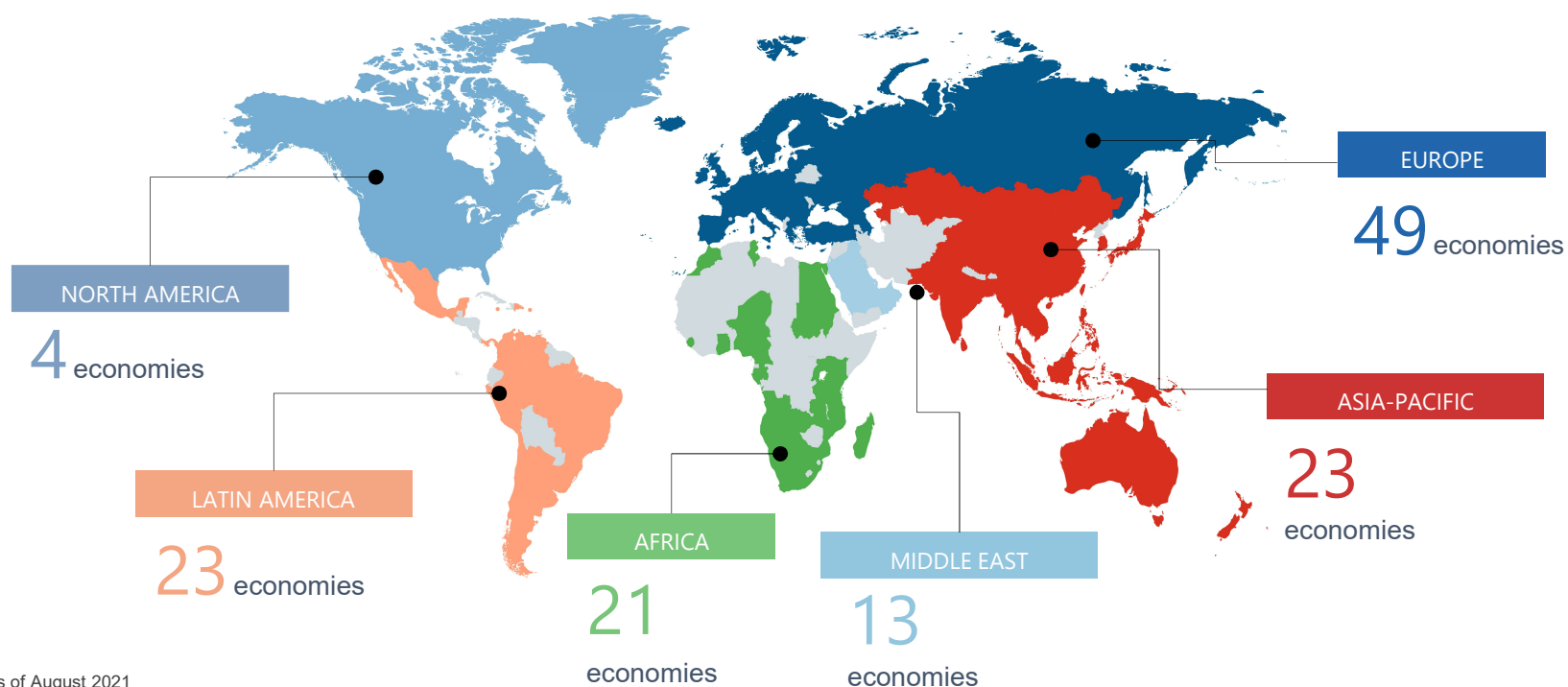
Products offered:

- Probability of Default (PD) & Probability of Default implied Ratings (PDiR)
- Corporate Vulnerability Index (CVI) & Aggregate Probability of Default (Agg PD)
- Actuarial Spread (AS)
- CRI Systematically Important Financial Institutions (CriSIFI)
- Bottom-up Default Analysis toolkit (BuDA)
- SME PD Toolbox

80,000+
Number of firms CRI publishes probability of default data for

133
Number of economies that the default predictions cover

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Global Coverage

The CRI produces default predictions for over **80,000** public firms in **133** economies*

NORTH AMERICA

4 economies

LATIN AMERICA

23 economies

AFRICA

21 economies

MIDDLE EAST

13 economies

EUROPE

49 economies

ASIA-PACIFIC

23 economies

*As of August 2021

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Default-adjusted analytics proposition
Yield Book & CRI

Introduction: High yield corporate bond market

Government bonds have reached **historical low yields**, leading the market to **look for higher yields in the corporate bond market**.

Government Bond Yields (2012 - 2021ᵧₜ𝒹)
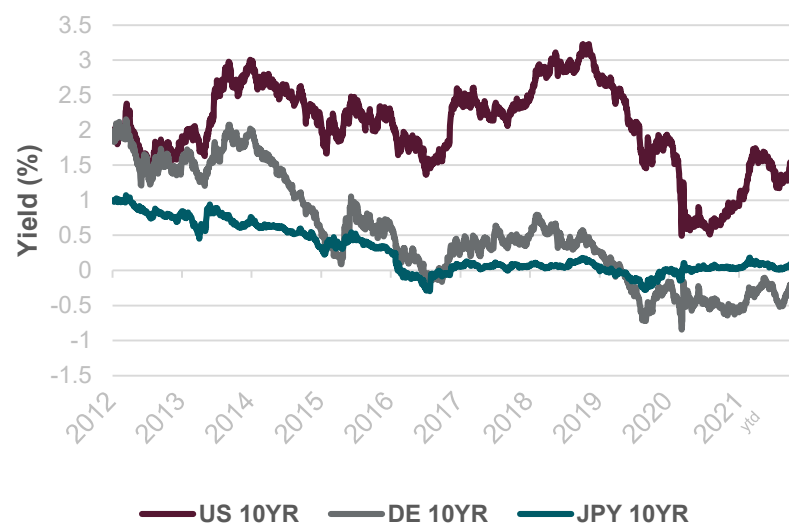
Source: Yield Book, as of 4 October 2021

High Yield Corporate Bond Issuance (2010 - 2021ᵧₜ𝒹)
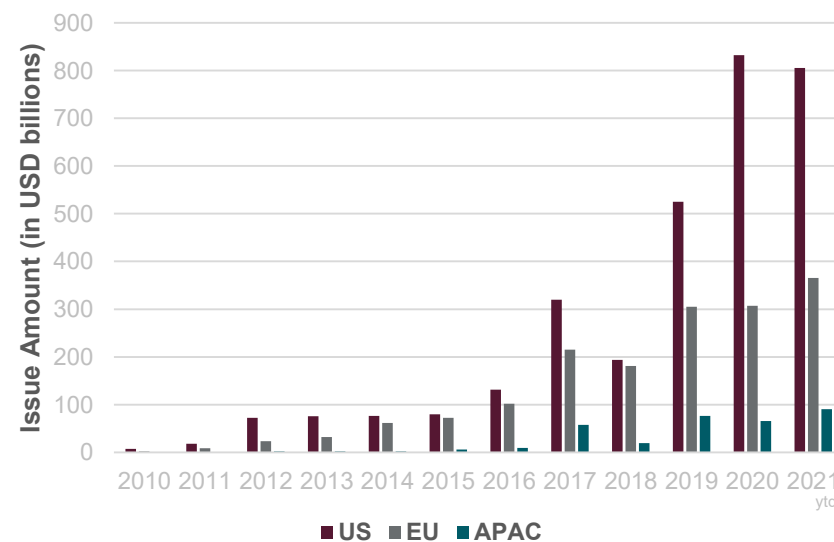
Source: Refinitiv, as of 4 October 2021

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An NUS CRI and Yield Book collaboration

Our combined offering of default adjusted analytical measures for the global corporate bond market addresses increasing needs for default risk management

NUS CRI probabilities of default	➕	Yield Book Analytics	➡	Comprehensive credit risk research for decision-making needs

- Transparent models aiming to provide an alternative to commercial credit rating. Produces default predictions for over 80,000 public firms in 133 economies
- Widely respected in academia and rapidly gaining traction in industry with flagship product, probabilities of default

- 30 years of experience serving clients worldwide across the financial industry. Provides a comprehensive, trusted and market-leading library of fixed income analytics

- Yield Book maps probabilities of default to corporate bonds, providing daily and reliable default probabilities and default adjusted analytics
- Providing solutions to clients to better manage and report the risk associated with investing in corporate bond instruments
- Default-adjusted metrics can be calculated and made available via Yield Book, Batch, Yield Book Add-In, and Yield Book API
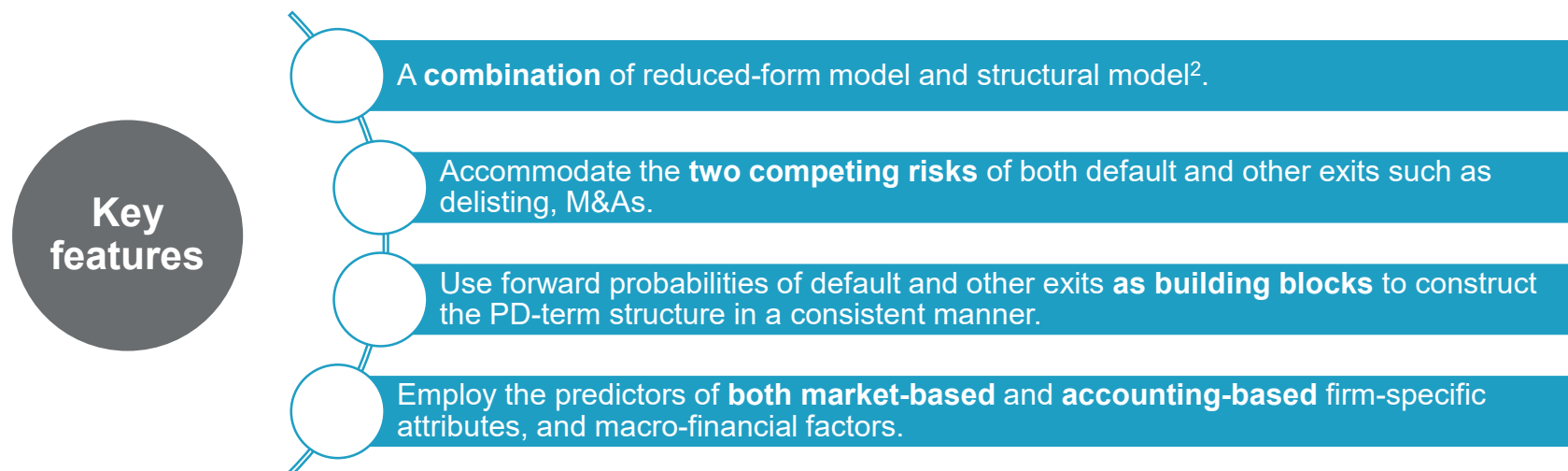
Methodology
Probabilities of Default

CRI Corporate Default Prediction System

The CRI corporate default prediction system is built on the most recent **forward intensity model** developed by Duan, Sun and Wang[1] (2012) and published in the Journal of Econometrics, issue 170, 191-209.

This forward intensity model is governed by two independent doubly stochastic Poisson processes, operating on forward time instead of spot time.
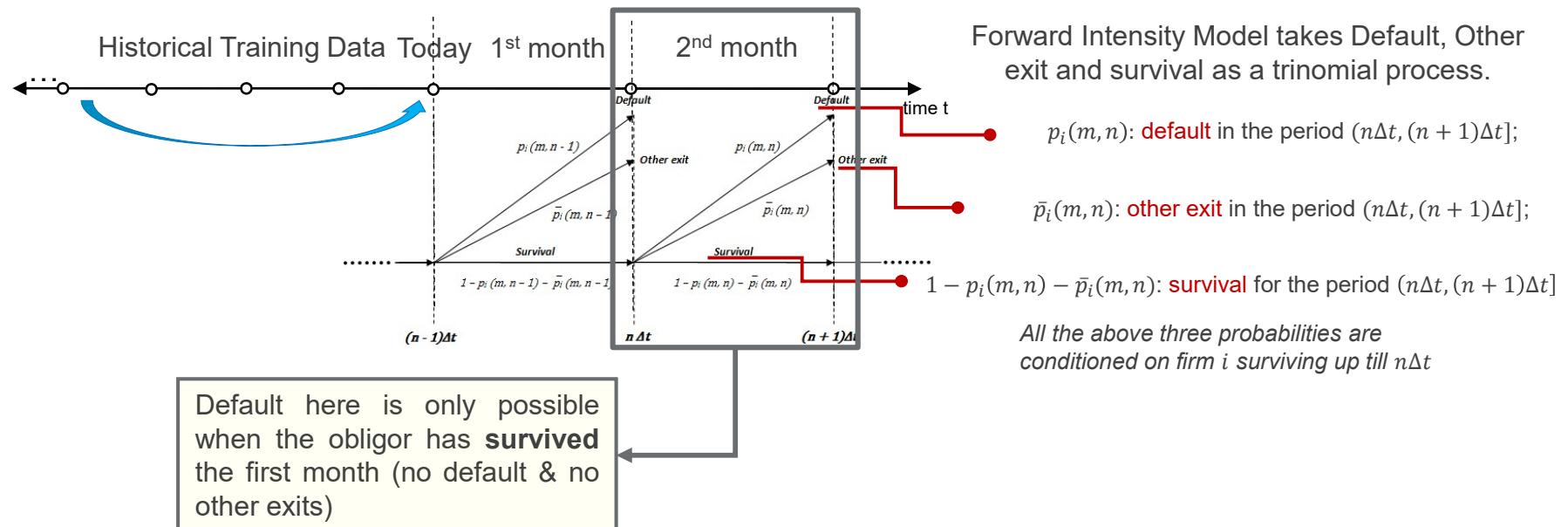
Key features

- A **combination** of reduced-form model and structural model[2].

- Accommodate the **two competing risks** of both default and other exits such as delisting, M&As.

- Use forward probabilities of default and other exits **as building blocks** to construct the PD-term structure in a consistent manner.

- Employ the predictors of **both market-based** and **accounting-based** firm-specific attributes, and macro-financial factors.

[1] Duan, J.-C., Sun, J., and Wang, T. (2012), "Multiperiod Corporate Default Prediction – A Forward Intensity Approach". *Journal of Econometrics, 170(1), 191-209*
[2] Structural model: modified KMV used for DTD input / Reduced-form: Forward Intensity model used for PD

CRI Default Prediction System Framework

Forward probabilities (default and other exits) are the building blocks to generate the "forward looking" PD term structure from one month up to five years.

Historical Training Data Today 1st month   2nd month

$p_i(m, n - 1)$

$\bar{p}_i(m, n - 1)$

Survival

$1 - p_i(m, n - 1) - \bar{p}_i(m, n - 1)$

$p_i(m, n)$

$\bar{p}_i(m, n)$

Survival

$1 - p_i(m, n) - \bar{p}_i(m, n)$

$(n - 1)\Delta t$ $n\,\Delta t$ $(n + 1)\Delta t$

Default
Other exit
time t

Forward Intensity Model takes Default, Other exit and survival as a trinomial process.

$p_i(m, n)$: default in the period $(n\Delta t, (n + 1)\Delta t]$;

$\bar{p}_i(m, n)$: other exit in the period $(n\Delta t, (n + 1)\Delta t]$;

$1 - p_i(m, n) - \bar{p}_i(m, n)$: survival for the period $(n\Delta t, (n + 1)\Delta t]$

All the above three probabilities are conditioned on firm i surviving up till $n\Delta t$

Default here is only possible when the obligor has **survived** the first month (no default & no other exits)

CRI PD Model Input Variables

X_t	4 Macro-financial Factors
Stock Index 1-year Return	
Short-term (usually 3-month) Risk-free Rate	
Economy-level DTD for financial firms[1]	
Economy-level DTD for non-financial firms[1]	

$Y_{i,t}$	10 Firm-specific Attributes
Distance-to-Default (Level and Trend)	
Log(Cash/Total Asset) for financial firms, or Log(Quick Ratio[2]) for non-financial firms (Level and Trend)	
Net Income/Total Asset (Level and Trend)	
(M/B Ratio)/(Median M/B Ratio in economy)	
Relative Size (Level and Trend)	
Idiosyncratic Volatility	

Forward Default/Other Exit Probabilities: $p_{i,t}(\tau) = F_\tau(X_t, Y_{i,t})$

i: i-th firm   **t:** prediction time point τ: forward time period

- **Level:** Mean value in the last 12 months.

- **Trend:** Current value minus level, to capture the momentum effect.
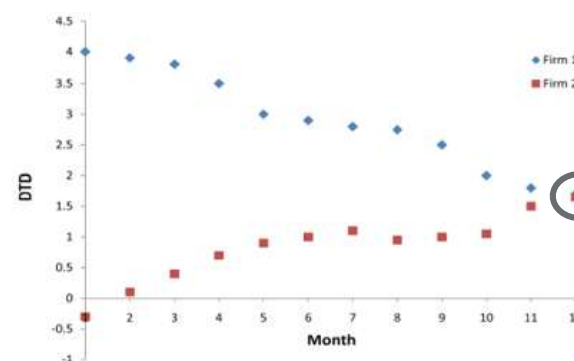
Two firms with the same DTD level but DTD trending in the opposite direction are likely to have different forward-looking PD

[1] Except for China
[2] Quick Ratio is defined as Current Asset/Current Liabilities

CRI PD Model Calibration

In certain economies, there are few or no credit default events due to limited number of listed firms, which means that calibrating models for individual economy would not be statistically meaningful

- In view of this, public companies around the world are segregated into **six calibration groups** according to certain similarities in the **stage of economic development** and **geographic locations** of their primary exchanges.

Asia-developed economies

North America

India

Six Calibration Groups

China

Emerging Markets

Europe

- **The CRI PD measures of companies within the same calibration group share the same set of parameters**, except for some covariates in some special circumstances

- To overcome optimization difficulties caused by high dimensionality of the parameters, the CRI system employs the **Nielson-Siegel term structure function** and relies on **sequential Monte Carlo for the model's estimation**

CRI PD model is not static!

> As part of CRI's ongoing efforts to improve the predictive power and efficiency of our PD model, we regularly perform:

1. **Model updates and system recalibration** – to keep the data current and organic

2. **Yearly historical refresh of data** – so that historical data are also refreshed using parameters which are calibrated using most updated data

3. **Continual improvisation in coverage**

4. **Prompt notification** about such updates to clients, well in advance, and help them benefit from such updates

CRI PD Model Performance - Accuracy

Predicted vs Actual number of defaulted companies *in different regions*
Time horizon: 12 month PD
Correctly predicted default if PD is higher than average for industry
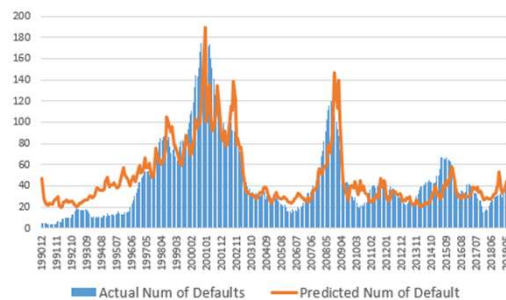
North America
(Accuracy Ratio = 85.7%)

Europe
(Accuracy Ratio = 75.2%)

Developed Asia-Pacific
(Accuracy Ratio = 76.3%)
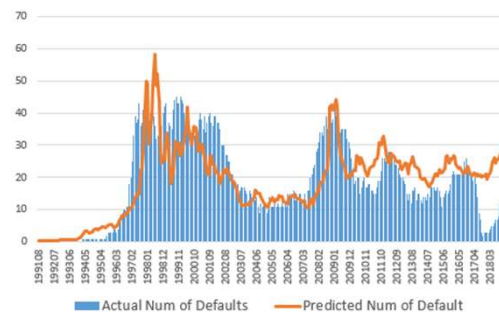
Emerging Markets
(Accuracy Ratio = 75.4%)

CRI PD Model Performance – Tianqi Lithium Corp
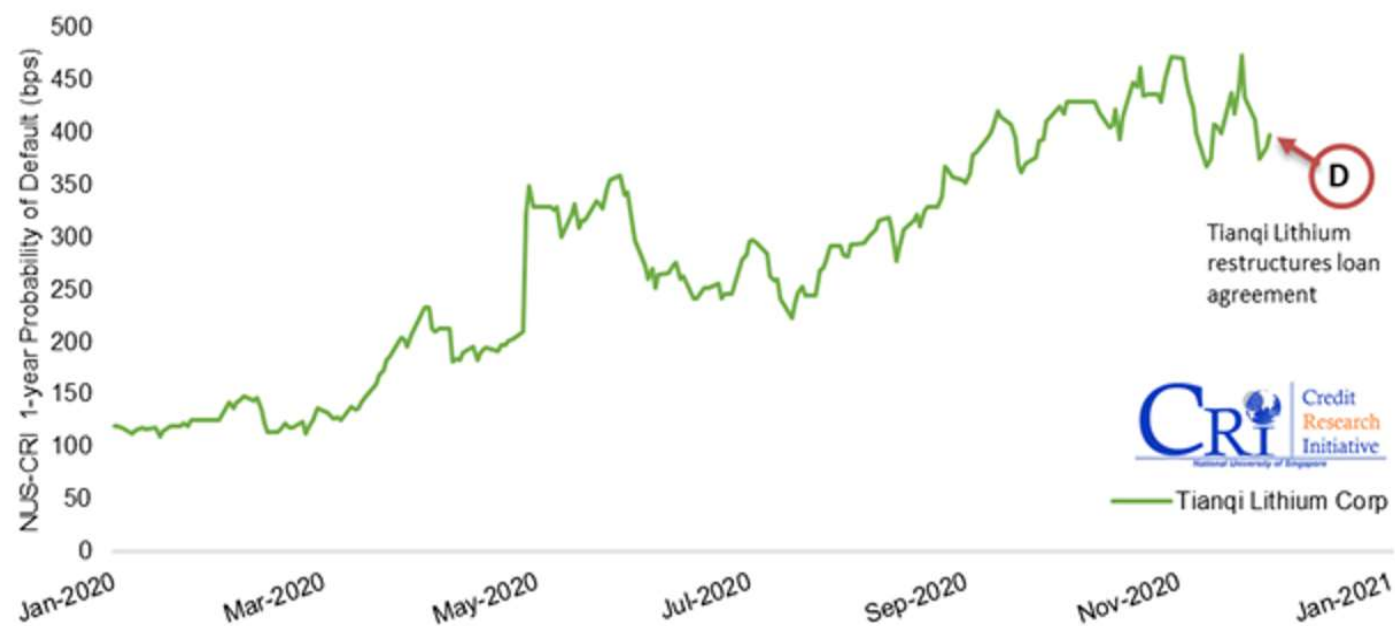
CRI PD Model Performance – Garuda Indonesia Persero Tbk PT
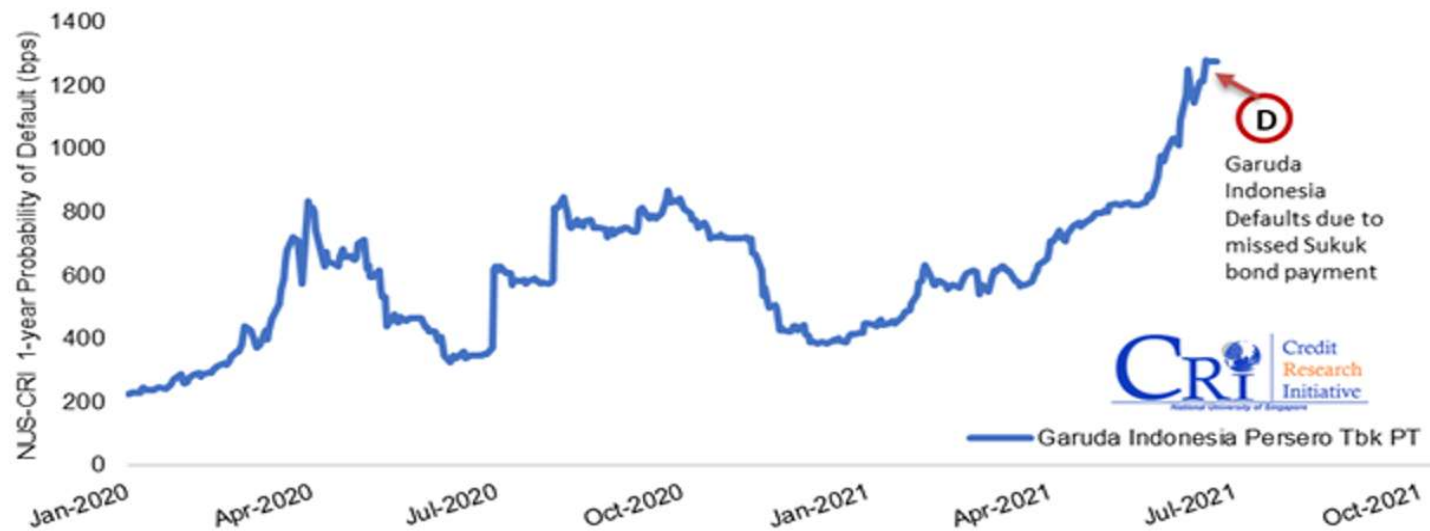
CRI PD Model Performance – China Evergrande Group
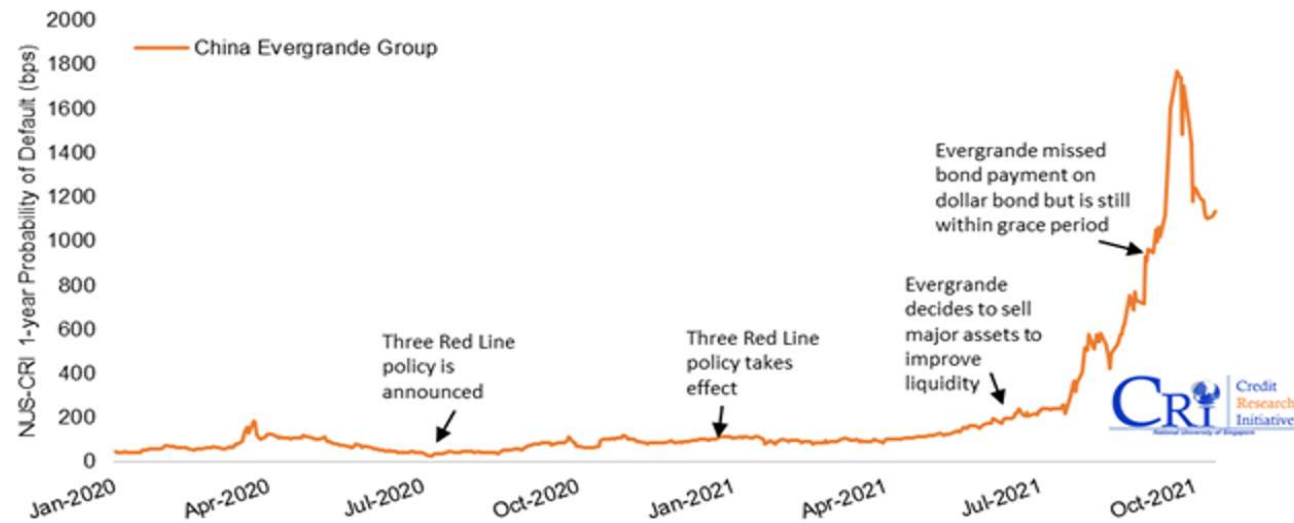
Yield Book

Default-Adjusted Analytics

Default-Adjusted Yield

Default-Adjusted Yield is calculated as the Yield to Maturity, while adjusting the future cashflows by the probability of default at that time. It will be typically lower than the market yield as the adjusted cashflows will be lower than nominal cashflows in common scenarios. The adjusted yield could represent a more realistic yield in anticipation of potential bond default. Details of the simplified calculation can be seen below.

- $$Bond\ Price = \sum_{1}^{n} \frac{DAC_i}{(1+YTM_{da})^i}$$

  With: $DAC_i = default\ adjusted\ cashflow$

  $YTM_{da} = default\ adjusted\ yield$

  $Face\ Value_{da} = default\ adjusted\ face\ value$

- $$Default\ adjusted\ cashfows = CF \times (1 - PD) + R \times PD$$

  With: CF = nominal cashflows

  PD = probability of default

  R = Recovery rate

Default-Adjusted Spread

Standard measures of credit risk, such as the Option Adjusted Spread incorporate all the risk premia involved when purchasing a bond (e.g. default risk, liquidity risk, tax risk). It is useful to decompose credit risk into separate components in order to quantify the default risk involved in purchasing a bond.

Default-Adjusted Spread is calculated based on a given market price using default adjusted cashflows instead of nominal cashflows, therefore incorporating the fundamental probability of default at each point until maturity. Lower expected cashflows lead to a spread less than the standard OAS, quantifying the lower spread advantage expected in case a bond defaults before maturity. Details of the simplified calculation can be seen below.

- $$Bond\ Price = \sum_1^n \frac{DAC_i}{(1+RFR_i+DAS)^i}$$

  With: DAC_i = Default adjusted cashflows for each period

  RFR_i = Risk free rate for each period

  DAS = Default adjusted spread

- $$Default\ adjusted\ cashfows = CF \times (1-PD) + R \times PD$$

  With: CF = nominal cashflows

  PD = probability of default

  R = Recovery rate

PD Implied Theoretical Price

The **Theoretical Price** considers the bond as a set of cashflows where the only risk is the possibility of default. It therefore treats the bond as the set of default-adjusted cashflows discounted by the risk-free rate.

- The Theoretical Price considers default risk in isolation and will often be higher than the observed Market Price which incorporates multiple real-world risks including default risk, credit deterioration, liquidity, tax etc.

- It may be lower than the market price in situations where the probability of default is calculated as being significantly higher than market consensus.

DEFINITIONS

- $$P_{PD\ implied} = \frac{Default\ adjusted\ cashflows}{1+\ Risk\ free\ rate}$$

- $$Default\ adjusted\ cashfows = CF \times (1 - PD) + R \times PD$$

  With: CF = nominal cashflows

  PD = probability of default

  R = Recovery rate

Default-Adjusted Analytics: Spread Advantage Insights

After adjusting original spread (**45.90 bps**) calculations for default risk, we see that the bond bears <u>**no spread advantage**</u> (**-0.02bps**). In other words, all spread consists of default risk for this bond. Default-adjusted analytics **reveal risk drivers** and **improves bond comparison analysis**.

Assumptions: 1-year non-callable, zero-coupon bond, 1-year spot risk free rate of 2%, 1-year PD of 0.75%, recovery rate R of 40% and P_{mkt} of 97.6

Without default adjustment

$$Nominal\ cashflow\ at\ 1\ year\ =\ 100$$

$$Treasury\ equivalent\ present\ value\ (P_{TE})\ =\ \frac{100}{1+2\%} =\ 98.039$$

$$Spread\ added\ to\ the\ risk\ free\ rate\ to\ discount\ non-default\ nominal\ cashflow\ =\ \frac{100}{97.6} -\ 1\ -\ 2\% \boxed{=\ \textbf{45.90\ bps}}$$

With default adjustment

$$Default\ adjusted\ cashflow\ at\ 1\ year\ =\ 100 \times (1-PD)\ +\ PD \times R\ =\ 100 \times (1-0.75\%)\ +\ 0.75\% \times 40\ =\ 99.55$$

$$PD\ implied\ theoretical\ price\ =\ Treasury\ equivalent\ present\ value\ with\ default(P_{TEWD})\ =\ \frac{99.55}{1+2\%}\ =\ 97.598$$

$$Default\ adjusted\ spread(OAS_{da})\ =\ \frac{99.55}{97.6} -\ 1\ -\ 2\% \boxed{=\ \textbf{-0.02\ bps}}$$

Default-Adjusted Analytics: Bond Comparison Analysis

Three bonds with **similar** spread, but **different** probabilities of default.
The higher the probability of default, the higher the default risk premia associated with the bond.

Low probability of default	Small PD, leads to **small adjustment** in Default Adjusted Spread and Default Adjusted Yield

Issuer	Maturity	Rating	Coupon	YTM	Default Adjusted Yield	Spread	Default Adjusted Spread	1-Year PD	3-Year PD	5-Year PD
Bond A	01/05/2029	BB+	4.25	2.203	2.186	88	86	0.0001	0.0231	0.1951

Medium probability of default	**Same rating** as small PD, but higher PD leads to **higher adjustments** in Default Adjusted Spread Default Adjusted Yield

Issuer	Maturity	Rating	Coupon	YTM	Default Adjusted Yield	Spread	Default Adjusted Spread	1-Year PD	3-Year PD	5-Year PD
Bond B	15/05/2025	BB+	8.625	5.824	4.957	85	38	0.7287	3.7575	6.6228

High probability of default	High PD, leads to **large adjustments** in Default Adjusted Spread and Default Adjusted Yield

Issuer	Maturity	Rating	Coupon	YTM	Default Adjusted Yield	Spread	Default Adjusted Spread	1-Year PD	3-Year PD	5-Year PD
Bond C	01/04/2023	BB-	11.5	2.64	1.524	91	-12	1.3752	5.9374	9.773

Default-Adjusted Analytics: Portfolio Example

Refine your analytical insights to include metrics such as expected worst case scenario yield. After taking the probabilities of default into account, **the yield an investor can expect to receive is 3.54%, compared to the nominal yield of 5.516%**.

Yield-to-Maturity expected from a portfolio of corporate bonds, with and without considering actual PD

Corporate Bond	Ticker	Maturity	Rating	1-year PD	Displayed Yield	Default Adjusted Yield
Caesars Growth Properties Hold	CZR	01/07/2025	B+	10.042%	4.248	2.692
Cooper-Standard Automotive Inc	CPSXX	15/11/2026	CCC	4.741%	10.306	8.254
CVR Energy Inc	CVI	15/02/2028	B+	4.182%	6.1	4.588
MPH Acquisition Holdings LLC	MPHAC	01/11/2028	B-	6.711%	6.779	4.162
Tenneco Inc	TEN	15/04/2029	B+	4.55%	4.544	3.247
Adapthealth LLC	ADPTH	01/08/2029	B	5.327%	4.624	3.043
Sinclair Television Group Inc	SBGI	01/03/2030	CCC+	9.614%	5.995	3.107
CHS/Community Health Systems I	CYH	15/02/2031	B	3.622%	4.552	2.96
Bed Bath & Beyond Inc	BBBY	01/08/2044	B+	5.78%	5.592	2.753
Portfolio Yield					**5.516**	**3.54**

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Tracking Error Using CRI PD

Tracking error, which is the standard deviation of the difference of returns of a portfolio and a benchmark, is a widely used measure of relative risk. Tracking error estimates are used in a variety of ways.

- Passive managers seek to minimize tacking error by constructing portfolios that have similar sector and curve exposures as the benchmark.
- Active managers use tracking error to ensure that the structure of their portfolio is consistent with their view and does not violate their risk guidelines.

- **Default loss of corporate bonds constitutes a significant portion of tail risk and, therefore, has been incorporated as a separate return component.**

- **The default loss adjustment specific to corporate returns when calculating the Tracking Error[1] will use the Credit Research Initiative's Probability of Default data.**

  - If CRI PD is not available, we apply a rating implied PD, which the user can change.

- **We use a single period binomial model to estimate the return:** $r_{adj} = (1 - \chi) \times r_0 - L \times \chi$

  With: r_{adj} = default-adjusted total return of a corporate bond

  χ = default indicator function, which is one if the issuer defaults and zero otherwise

  r_0 = total return under the no default scenario

  L = loss-given-default

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[1] *"A Common Framework for Estimating Tracking Error of Fixed Income Portfolios" - Yield Book.com*

Accessing Default-Adjusted Analytics in Yield Book

Default-Adjusted Analytics in Yield Book Add-in (1/3)

How to get Probabilities of Default in Add-in

Default-Adjusted Analytics in Yield Book Add-in (2/3)
How to show Default Probability Curves in Add-in

Indicative Data ▾   √α Price/Yield   Cash Flow

Historical Data ▾   ☐ Scen ROR   Return Attribution

Curves   **1** → Curves ▾   Actual ROR   MBS Analysis ▾

         ty Analysis

- Curve Data
- Live Curve Data
- Curve Analysis
- Volatilities
- Volatility Calibration
- Yield Curve Monitor
- CDS Curve
- Forward Exchange Rate
- Live TBA Price

Default Probability Curves   **2** → Default Probability Curve

Cumulative Probability of Default   ✕

Input Type: ⦿ Bond

Bond Id   PD Curve Type   **3**   **PD Curve Type**

[___]   [NUS ▾]

Curve Date   Curve Years

[▾]   [___]

Formula: =YBPDCURVE("","NUS","","","bond","","")

⇐ ⇒ ⇑ ⇓   Help   Apply   Done

Default-Adjusted Analytics in Yield Book Add-in (3/3)
How to get Default-Adjusted Analytics in Add-in

1 Select Price/Yield

2 Calculation Options

3 PD Override

4 Keywords

Yield Book

Thank you

Questions?

Appendix

I. Additional Product Overview

Yield Book Keywords Summary

Keyword Name	Definition
Classic: CPD1YR Add-in: NUSCPD1YR	Probability the issuer will default in 1-year
Classic: CPD2YR Add-in: NUSCPD2YR	Probability the issuer will default in 2-years
Classic: CPD3YR Add-in: NUSCPD3YR	Probability the issuer will default in 3-years
Classic: CPR4YR Add-in: NUSCPD4YR	Probability the issuer will default in 4-years
Classic: CPD5YR Add-in: NUSCPD5YR	Probability the issuer will default in 5-years
Classic: PDDAYIELD Add-in: PDAdjustedYield	Default-Adjusted Yield
Classic: PDSPREAD Add-in: PDAdjustedOAS	Default-Adjusted Spread
Classic: PDTHEORPRC Add-in: PDImpliedPrice	PD implied theoretical price

Appendix

II. Overview of Yield Book Products

Overview of Yield Book products

Yield Book offers **multiple, flexible delivery channels** and **extensive configuration options** to **support clients with their individual fixed income needs**. Our solutions can be accessed across easy-to-use web interfaces, through spreadsheet applications or scheduled reporting, or deeply embedded directly into client technology workflows and applications.

Yield Book Add-In

Delivers the power of our fixed income models directly inside the Microsoft Excel®. Users can customize templates to perform complex calculations from risk measures, scenario and cash flow analysis and return attribution to historical analysis at the individual security, sector, portfolio and benchmark-level

Yield Book API

Provides access to our trusted data and analytics from within your custom applications by sharing information directly with our servers over a secure internet connection using the XML format. *Modern REST API services under construction and to be deployed in 2021*

Yield Book Classic & Batch

Offers the capacity for large scale single security, portfolio and benchmark calculations in a web-based application. Robust batch scripting and batch-on-demand production tools allow for automated large-scale calculations and enable integration of Yield Book analytics into other in-house applications

Yield Book Calculator

Yield Book Calculator facilitates fast and efficient analysis of single securities using Yield Book's trusted models and analytics. Examine bond characteristics and risk measures, run scenario analysis, and view projected cash flows and historical trends, all with this easy-to-use tool

Yield Book Structuring Tool

Utilizing the best-in-class Analytics capability, the Yield Book Structuring Tool is an application designed for traders who wish to structure newly issued Agency Collateralized Mortgage Obligation (CMO), Credit Risk Transfer (CRT) deals or Non-Agency deals in the primary market.

Yield Book Add-In

Delivering the power of our fixed income models directly inside the Microsoft Excel®.

Users can **customize templates to perform complex calculations** from risk measures, scenario and cash flow analysis and return attribution to historical analysis at the individual security, sector, portfolio and benchmark-level

Integrated Solution	As it extends the functionality of the Excel application with custom tasks, Yield Book Add-In leverages Excel's interface and functionality, making the desired output extremely flexible and fully customizable
On-Command Execution	Users have control over when calculations are made with the flexibility to partially or fully calculate the spreadsheet. This allows users to run calculations either on single securities or at the portfolio level
Smart Processing	Yield Book Add-In recognizes dependency trees within analyses; hence it follows a desired order for calculations. This allows users to price securities relative to other securities
Concurrent Analyses	The spreadsheet environment allows for simultaneous calculations of different models or different assumptions
Programmatic Control	A library of Yield Book Add-In specific Visual Basic commands allows the user to leverage Yield Book data and analytics inside scripts
Customisations	Customize a template created by Yield Book analysts or design your own worksheet. Create charts and graphs in your worksheet based on Yield Book analytics

Yield Book API

Providing access to Yield book's trusted data and analytics from within your custom applications. Customer user applications **communicate directly with Yield book's servers** over a secure internet connection, sending and receiving messages in XML format. *Modern REST API services are currently in development and expected to be deployed late 2021*

Flexibility	**Access to data, 24/7**	**Comprehensive security coverage**

• Yield Book API is supported by virtually any programming environment, such as Visual Basic, .NET, or Java
 	
• Your custom application can process multiple securities or multiple types of analysis simultaneously, providing fast processing times
 	
• Alternatively, your custom application can be deployed to multiple users who can then perform calculations independently
	• Connect to Yield Book database servers 24 hours a day, 7 days a week
	
	• Access comprehensive sets of data such as indicative data for bonds, historical pricing, yield curves, and actual versus projected prepay speeds for mortgages
		• Get analytical insight into Yield Book's extensive range of financial products in the fixed income space including:
		  – Governments
		  – Agencies
		  – Corporates
		  – High yield
		  – Emerging markets
		  – Mortgages
		  – ABS
		  – CMBS
		  – CMOs
		  – Derivatives

Integration and automation solutions

Yield Book offers clients the ability to fully integrate the analytics
into existing processes on a scheduled or ad-hoc basis.

Client solutions

Automate processes via Batch-On-Demand (BOD) or via scripts using the Yield Book API solution. Both products allow for full integration and automation. The Yield Book consulting team can provide expertise to help optimise your process

Scheduling vs. ad-hoc

Run overnight batches/scripts to have the analytics available at the start of each business day. Run ad-hoc process throughout the day whenever additional analytics are needed

Robust automation capabilities

Utilising BOD or the API you are able to upload new portfolio and pricing data, calculate updated analytics and download output data for use in other systems

Speed

Ability to run more calculations in less time is available for both Batch-On-Demand and API solutions. The use of multiple threads allows time-sensitive projects to be completed quickly and deadlines to be met

Flexibility

Flexible architecture which accommodates a wide range of user inputs such as user curves, user prices, user bonds, user keywords, etc. These inputs, as well as calculations derived from them, can be transferred to and from YB on an automated basis

Full process integration

Connect Yield Book with your other systems to create a seamless process, allowing you to have one golden source of fixed income analytics within your company

Yield Book   **An LSEG Business**

Resources available for clients

Relationship Managers	• Assist with inquiries related to your account and licensing needs • Provide guidance on optimising automated processes and can offer project/implementation support • Provide customer training based on client's needs
Help desk	• Analytical help desk available 24h/day during weekdays • Provide client support on usage and analytics related inquiries • Available via phone or email
Technical support	• Tech support available 24h during weekdays; 10am-3pm EST on Sunday • Provide IT related support including diagnosis of system issues and IT-related problems • Provide guidance on technical aspects of automated processes • Available via phone or email
Customer education	• Personalised 1-to-1 or team training at your office or via WebEx • Scheduled live workshops across the globe • Online analytics and product-based webinars • Access to online knowledge database for fixed income related papers
Research content	• Dedicated research team, who are the engineers behind our models and products, publishes industry commentaries and model release updates on a frequent basis for clients to access • Quarterly RMBS agency model updates webinar to walk through the details and answer client questions

Website resources	• News and announcements – subscriptions possible
	• Access to online analytical and technical resources such as:
	    • Product support and documentation
	    • Model publications
	    • Video tutorials

Contact us

Yield Book

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